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NEW YORK STORAGE MEDICAL JOURNAL.

SEPTEMBER, 1870.

EDITED BY

EDWARD S. DUNSTER, M. D.

NEW YORK:

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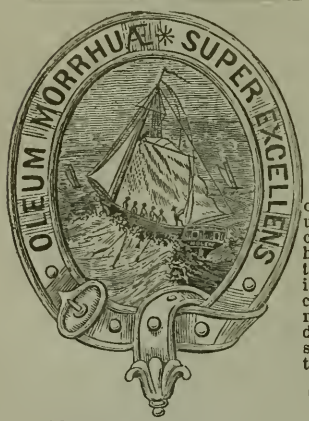

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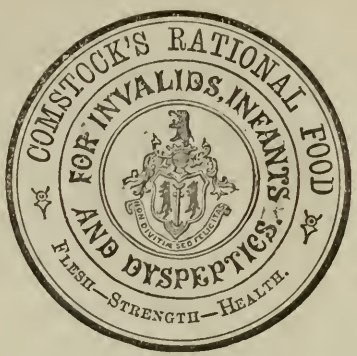

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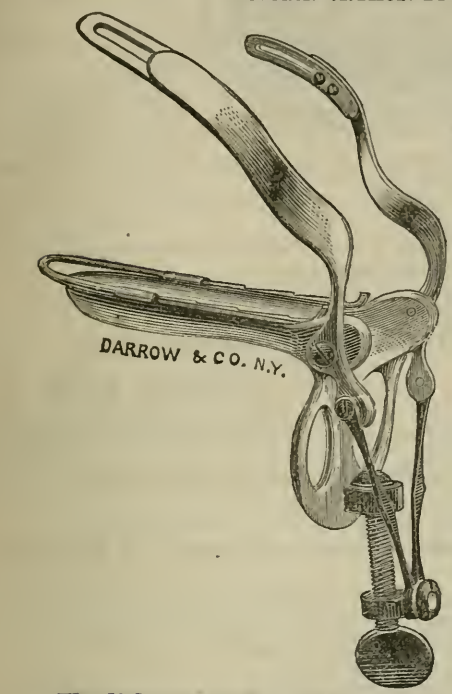

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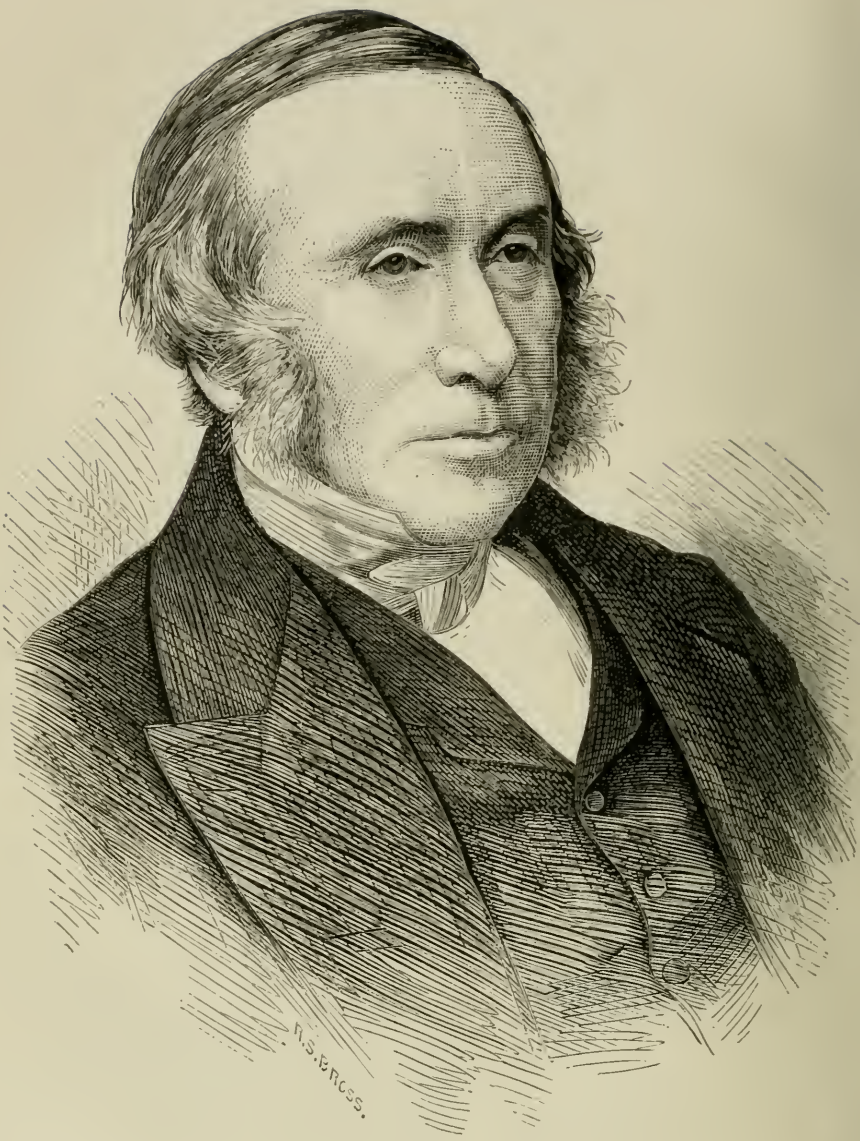

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(See page 117.)

NEW YORK

MEDICAL JOURNAL.

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VOL. XII.] SEPTEMBER, 1870. [NO. 2.

Original Communications.

ART. I.—*Intra-Uterine Medication.* By FREDERIC D. LENTE, M. D., of Cold Spring, New York.

I HAVE been very much interested in the perusal of the very important paper, on the above topic, read by Dr. Nott before the New York County Medical Society, and of the report of the discussion thereon by the many distinguished gynæcologists present at the meeting. Nothing can indicate more clearly than this discussion the present chaotic and uncertain state of uterine, and especially intra-uterine therapeutics. To render, perhaps, the "confusion worse confounded," though certainly not with that object, permit me to add my mite, which may, with other discordant facts submitted, finally tend to some reliable deductions.

It is asserted, in this discussion,[1] by one member, that certain applications cannot reach the uterine cavity at all; by another, that they do reach it, and produce the most painful and dangerous consequences; by another, that they may reach it, and may produce no effect at all, like Dr. Jacobi's piece of nitrate in the *bronchus;* by still another, that they do reach

[1] NEW YORK MEDICAL JOURNAL, July and August, 1870.

it, and produce the most beneficial results, and rarely any unpleasant consequences. Chromic acid and nitrate of silver appear to have met with more reprobation than any other agents; while iodine, even in its strongest preparations, received the highest encomiums as a perfectly harmless and very efficacious agent. Having quite extensively employed all these drugs, except chromic acid, and having given to the profession several instruments designed to facilitate their employment, it may be of some value, toward the elucidation of this important subject, to present to the profession a brief statement of some of my experience, especially as I have never before published a line with regard to it, except in the necessary description of the uses of certain instruments; having never yet been able to arrive at any definite conclusion as to the best treatment of these intractable affections, and the best agents for intra-uterine medication.

In the first place, as regards the alleged perfect safety and comparative painlessness of *iodine*, I beg leave to state that, in the case of one lady, the wife of an editor, I first dilated slightly the *os internum*, as is my custom, with one of a series of olive-pointed, graduated silver probes, without any considerable pain, and then introduced into the cavity of the uterus a little tincture of iodine (U. S. P.) by means of an ordinary cotton-carrier. Immediately, the most alarming pain and prostration set in, and I really thought that the lady would die. She was as pale as death, bathed in a cold perspiration, the pulse irregular, and almost imperceptible. I ran to a drug-store, near by, for some brandy, and poured it down her throat, but she rejected it; other restoratives were employed, but it was only after the lapse of an hour that I felt at all easy. At my next visit, some twelve hours after, she was as well as ever. Quite recently I made a first application, in the case of a lady from Brooklyn, the wife of a celebrated professional man. To be on the *safe* side, I diluted Churchill's tincture, which I usually employ in its undiluted state, with two parts of water, and passed it into the cavity of the uterus with a cotton-carrier of a peculiar fashion, to be presently described, and used it very sparingly. Almost immediately, the lady complained of violent pain, the surface was bathed in a cold perspiration, she

became excessively pale, pulse very slow and feeble, with nausea; she did not quite lose consciousness. One-third of a grain of morphia was injected hypodermically, and, within a few minutes, the pain abated, and, on giving some brandy, the symptoms gradually disappeared, and the next day she was as well as usual. A distinguished gynæcologist of New York City applied the tincture of iodine (U. S. P.) to the cavity of the uterus, in the case of a lady who had previously been under my charge, and immediately excessive pain and most alarming symptoms of prostration set in, causing him to feel the greatest concern for her safety, and requiring prompt and powerful stimulants, heat to the extremities, etc. No serious consequences resulted. Nevertheless, in the present state of my experience, I quite agree with Dr. Nott, and those who laud iodine, that it is one of the best and safest remedies we possess.

First, as regards treatment by *injections* into the cavity of the uterus. It is recommended that, in order to avoid the serious consequences which are known to have followed this mode of treatment, we should not fail to dilate the internal os, since, even with the recently-invented double tubes, the instantaneous coagulation at the *os internum*, by the fluid employed, may otherwise completely prevent the egress of any superfluous quantity. The fenestrated tubes contrived by Dr. Peaslee, and described and figured by him in the July number of the New York Medical Journal, afford the most reliable means of avoiding this danger. This matter of uterine injection, and the sudden and very painful, sometimes even fatal, results following it, and the mystery hanging over the cause of these results, merit more attention. It has been already noticed, but is not at all generally known in the profession, that the injection of pure water into the uterus is sometimes productive of as serious consequences as the most irritating fluids; not only this, but that these injections, even into the *vagina*, may have the same effect. Two instances occurred in my practice, several years ago, in which the most violent pain followed the vaginal injection of a weak solution of sulphate of zinc (two grains to the ounce) by means of Davidson's syringe, though the patients had repeatedly employed

these injections without a feeling of the slightest discomfort. I concluded that the end of the tube had, by chance, been inserted directly into the os uteri, blocking it up accurately, and that the fluid had flowed directly into the uterus through the central opening. Ever since, I have directed the apothecary to close up this opening, before dispensing those instruments. A lady, now under my charge, has been still more seriously injured by a vaginal injection of pure water. She had brought the syringe with her from New York, where she resides, and, as I was not aware of this fact, the central hole was not stopped. One day, last April, while using a copious vaginal injection of hot water, which she had been doing for some time, she was suddenly attacked with the most intense pain in the pelvis which she had ever experienced, shooting upward to the chest and shoulders, and downward to the feet. For several days after, she could scarcely move in bed, and the tenderness, on slightest pressure over the hypogastrium, was very great, and extended more or less to the whole abdomen. For several weeks the cervix was swollen and congested, and the slightest pressure, *per vaginam*, on the uterus or ovaria, caused very severe pain; there was also tumefaction of the right ovary and right broad ligament. She has not recovered from the accident from that day to this. Some months since, for the first time, I noticed, in print, a reference to this danger. It was a somewhat similar case reported to the Gynæcological Society of Boston, with the question, "What was the cause of it?" But few of the members had ever heard of such a case, or were aware of the danger, and various explanations were suggested. With regard to injections into the cavity of the uterus, Dr. Nott makes the following statement: "Numerous instances have occurred, under such circumstances, in which, not only severe uterine colics have followed, but almost instant collapse, and even death, in a short time." He asks, "How are we to explain these sudden and violent symptoms?" This question has given rise to a considerable amount of discussion and experiment, and still a certain mystery hangs over it. Dr. Barnes, in his recent excellent treatise on obstetric operations, gives eleven cases of death from uterine injection, and suggests three causes: shock; the entrance of air into the vessels;

and the passage of fluid through the Fallopian tubes. Dr. Nott suggests, in addition, the entrance of fluid *into the circulation*. *Air* has actually been found in the vessels and heart after death; but, I believe that, in these cases, the injections had been used either for induction of labor, or for the arrest of *post-partum* hæmorrhage. In such cases, we might be ready to admit that air entered the enlarged and gaping sinuses. But, it is more difficult to conceive that it should enter the vessels of the unimpregnated uterus. In some exceptional cases of chronic internal metritis, it is possible the Fallopian tubes might be so much dilated as to permit the passage of fluid, through them, into the peritoneal cavity; but it is very doubtful if the small quantity of any fluid, ordinarily injected into the uterus, and finding its way through the tubes, could produce any very injurious effect on the peritonæum; and the effect, if produced at all, would not be of that sudden description always characterizing these accidents. As regards the entrance of the medicated fluids into the circulation, it seems very doubtful if it is possible, and, if so, whether most of them would produce any noticeable effects, since salts, in considerable quantity, have been transfused repeatedly in cholera, with good though temporary effects; and even ammonia has been injected into the veins, as recommended by Prof. Halford, in cases of snake-bite, with no bad results. The *shock* caused by the sudden stretching of the uterus is undoubtedly the cause in those cases, like the first two noticed in this paper, where the symptoms, so severe at first, subside so quickly; and yet it seems unaccountable that this particular and apparently trifling injury should produce such alarming effects, when they never succeed the really severe operative procedures to which the uterus is constantly subjected. Whatever be the true pathology, however, of the phenomena under discussion, it is important to bear in mind the danger, and the fact that we have the means of avoiding it. But those who depend on *dilatation of the os*, as a means of avoiding the dangers of injection, seem to forget or to ignore the fact that the very preventive is capable itself of producing serious results, even death, as in one case fatal *tetanus*, and in another fatal *peritonitis*, has resulted from a sponge-tent,

in the practice of two of our most eminent gynæcologists. So, let us be chary in condemning our neighbor's choice of means, and not over-confident in the safety of our own. The importance of getting the diseased surface which is to be attacked by our application, whatever that may be, in a condition capable of being influenced by it, is acknowledged by most of those participating in the discussion. The difficulty of effecting this is not slight. To *wash it out* thoroughly, without first *fully dilating*, which can only be sufficiently done, perhaps, by a tent of some description, is unsafe, though one physician may accomplish it time and again, and another might almost, if not quite, kill his patient at the first attempt. To go through with the tedious, sometimes painful, and not always safe process of dilatation, at each application, would render the treatment complicated, and, of course, troublesome to the physician, and unnecessarily annoying and expensive for the patient. Dr. Nott's suggestion, which is also that of Prof. Thomas, to suck up, with a syringe, the mucus within the cavity of the uterus and canal, seems far preferable, if it be quite feasible. To accomplish it, I would suggest that, perhaps, the ointment-syringe, devised by me, and figured in Dr. Thomas's work on the diseases of women, would answer the purpose well, being careful to see that the *fenestræ* of the tube are of sufficient size. Some one has much improved it by substituting glass for the hard-rubber receptacle for the ointment. The openings, being in the side of the tube like a catheter, there is no danger of occluding them by pressing the end of the tube inadvertently against the sides of the uterus. It was this very difficulty of reaching the diseased membrane effectually by any of the appliances then in use, which led the writer, several years since, to use the solid nitrate of silver fused on the end of a probe, and to offer to the profession what has since been termed the *intra-uterine porte-caustique*, and quite extensively used by gynæcologists, and not any particular partiality for the nitrate itself.

The great advantage of the solid nitrate, fused on the end of a probe, is, that we can use a definite quantity, and apply it in a definite manner to any particular portion of the lining membrane which we may suppose affected by disease. By the size

of the knob, after some experience, and after having broken it off and weighed it once, we may, with sufficient accuracy, judge whether we have five, eight, or ten grains. Dr. Jacobi remarked that "the advantage it offers is that it will never act beyond the place where it is applied. . . . But I confess," he says, "that, from this very fact, I have little faith in its producing any effect on the whole lining membrane of the uterus, when introduced in the solid form; I think it can only affect the limited part with which it comes in contact." The great advantage claimed by the writer for this instrument and method of using the drug is, that we may pass it, with whatever pressure we may consider requisite, *over every part* of the diseased surface, and avoid, to a considerable extent, that which is sound; and that it is thus made to *pass through* the thick secretion generally coating the diseased membrane, and to effectually attack the membrane itself, rendering cleansing, with all its tedious and more or less painful preliminaries, unnecessary.

Now, a few words with regard to the *danger* of using the *solid nitrate*, which has been much emphasized in the discussion and elsewhere. It certainly has the merit of being the neatest, the most convenient, and most manageable, as regards certainty of application, of all methods. In the first place, I protest against the application of the term *caustic* to the nitrate of silver, whether in the fluid or solid form, or to placing it in the same category with *chromic acid;* as this very misnomer has had not a little influence in generating the prejudice which has always existed against the use of the remedy in various departments of practice. So far from being a caustic, it is well known that, in its solid form, it may be left in contact with the tissues, and, by its powerful astringent and coagulant power, will *protect* them from any thing like a destructive process. To produce a caustic, or, properly speaking, *destructive* effect, it must be *forcibly* rubbed on the part, or applied *with unusual frequency* for this special purpose, or thrust into the substance of the tissue (as in the case of exuberant granulations, mucous polypi, etc.). No man, so rash as to employ any thing approaching this violence on the interior of the uterus or of the cervical canal, should ever undertake the

topical treatment of their diseases. Although I have frequently applied it to the whole lining of the uterus, and the patient has never confined herself to the bed at all, and, on some occasions, has felt only trifling inconvenience, yet it is not to be denied that, as a general rule, it causes very severe *pain*, which, if not checked by some anodyne, may last, in a more or less mitigated form, for twelve or even twenty-four hours. But, as I always caution the patients beforehand, that they must expect it, and leave the remedy for counteracting it, I rarely have occasion to visit them until the time for another application arrives. If the pain is very severe, before leaving the house, I inject morphine hypodermically, and within ten or fifteen minutes it is completely relieved, and rarely recurs to any considerable extent. If opium should disagree, a full dose, thirty or forty grains, of chloral-hydrate, would probably be sufficient, repeated if necessary. The symptoms following the application frequently resemble, in some respects, those of a violent attack of *metritis*, and some physicians, who tried the method on my recommendation, informed me that metritis was induced by it. In my first cases I was myself considerably alarmed, until I learned, from larger experience, that my fears were entirely groundless. For, although the pain is so intense, as it sometimes is, it is somewhat remarkable that the pulse seldom, if ever, rises above eighty, unless in the case of some unusually nervous and hysterical female, and is full and regular, which could hardly be the case in acute metritis. In some cases there will be tenderness over the hypogastrium for several days after an application, rendering the recumbent posture advisable, and sometimes fomentations; but still the *pulse* is not accelerated, and the tenderness invariably subsides. It is somewhat singular that, on some occasions, a timid and imperfect application seems to give rise to more unpleasant effects than a thorough one; and, that the gentle application of the exploring probe to the internal wall of the uterus, in some very irritable cases, has caused full as much, if not more, pain than the nitrate, which has followed it. For instance, in the case of a lady recommended to my charge by my friend Prof. Peaslee, during his absence from the city, I conceived that a certain

obstinate affection of the lining of the uterus required a strong alterative directly to its surface. One of the characteristic symptoms, in her case, had always been a most sensitive condition of the uterus, the slightest pressure over the hypogastrium being painful, and any considerable degree always followed by distress, lasting for hours. The passage of the probe into the cavity, and the touching of the walls in the gentlest manner, through the speculum, gave the most intense pain that I had ever met with in uterine disease. With some trepidation, and many misgivings, notwithstanding a large experience with it, I passed in the solid nitrate, and applied it to the whole surface of the uterus. She suffered intense pain, of course, but said distinctly that it was no worse, and she thought even less, than that produced by the probe. Large anodyne enemata *per rectum* were required at intervals, for some hours after, but, at my next visit, on the succeeding day, she was suffering less pain than before the application. Pulse 75. Subsequently, three similar applications, at long intervals, were made with the effect of relieving the symptom (periodical watery discharge, preceded by severe pain, tenderness, etc.) for which it was employed. M. Nélaton has employed "cauterization of the uterus" very extensively by means of the solid nitrate, and, according to Dr. Atlee,[1] "has never seen it attended by any bad effect." He also states that "M. Cazeaux has told him that he considered it an operation totally exempt from danger." It has been asserted that the use of the nitrate induces metrorrhagia, or increases the tendency where it already exists. I can only say that my own statistics, now amounting to no small number, do not substantiate this charge. Any active local medication may induce hæmorrhage occasionally. It has happened that, in cases where I have applied the persulphate of iron, considered the most reliable of all hæmostatics, to the interior of the uterus, I have had the greatest inconvenience from subsequent sanguinolent discharge, though probably only a coincidence. A more serious objection is the alleged production of *induration*, and of *contraction* of the *os internum*. That it can and does

[1] Clinical Notes on Surgery, from Notes taken by W. F. Atlee. Philadelphia, 1855, p. 722.

produce these effects must be admitted, and this should make us cautious not to push its use too far, in any particular case, and to employ it with the utmost judgment, both as to manner of application and the length of the interval between the applications. The same objection to its use in various morbid conditions of the surface of the body has long ago been urged, and has arisen almost entirely from its injudicious employment either as to frequency or severity of application. For instance, in the case of *ophthalmia tarsi*, it was, a few years ago, generally reprobated by the surgeons of the New York Eye Infirmary, yet in this most intractable affection I have found it, in conjunction with partial or complete evulsion of the cilia, almost uniformly successful. It is not possible for me to say whether or no some induration of uterine tissue may have resulted from the great number of applications of the nitrate made by me; but no distinct case has been observed, and a great many of the cases remain constantly under my observation. With regard to contractions of the *cervical canal* and *os internum*, I do not remember any case of sufficient importance to give rise to any inconvenience, in my own practice. On the contrary, in some cases, where, as occasionally happens, in "corporeal endometritis," the *os internum* has been so contracted, as, in conjunction with a certain amount of flexion, to prevent the entrance of a probe, the application of the solid nitrate to the congested membrane, and against the contracted os, repeated once or twice, has caused the latter to open, as it were, and subsequently to admit of applications within it, as we occasionally see in strictures of the urethra. But, within a year, I have seen two cases in the practice of another physician, to whom, in consultation, I recommended the use of the nitrate to the interior of the uterus, in which very marked contraction of the internal os followed the treatment. I am not sure that the treatment and the pathological condition bore the relation of cause and effect, as there were other concomitant conditions, which might, at least, have had a share in the causation. But we attributed the result mainly to the nitrate, or rather to its injudicious employment, for this physician has had the candor to inform me lately that he has no doubt the trouble arose mainly from his timidity in ap-

plying the nitrate, passing the bulb rather over the upper part of the canal and *os internum* than fearlessly over the interior of the uterus. A bulb larger than that formed by the nitrate should always pass freely through the internal os, before the latter is introduced, so that no injurious force at this point may be likely to occur. I have this very day examined the wife of a brother practitioner residing in another place, where I found the *os externum* almost completely occluded, it being impossible to introduce a pocket-case probe without first dividing the stricture. This gentleman used the solid nitrate more than a year ago, at which time, he says, there was no contraction of the os. But, not having had much experience with the treatment, he used it, as he says himself, too freely. He applied it for two months, and at intervals of only five and six days, whereas they should have been at least eight days (the treatment having been addressed merely to the canal). And the nitrate was rubbed more freely over the os, where but a light application was requisite, than to the canal itself, where a more bold and thorough application, at proper intervals, would probably have resulted in more lasting benefit. The symptoms were, however, for the time relieved, and the stricture is superficial, almost membranous.

As regards the length of the *interval* which should elapse between the applications, it must depend, of course, somewhat upon the case. It requires a few days for the processes, lighted up by so strong an application, to pass through their stages, and for the film of coagulated tissue (not an eschar) to be cast off. My usual plan is, to wait until the discharge, if any, caused by the application, has disappeared for a couple of days, and for all the subjective symptoms to subside, and a feeling of relief, to a greater or less degree, from old symptoms, to take their place, which we may usually expect, before I venture to repeat the application. Dr. Thomas says two weeks, which is probably the correct *average*, as we must take into consideration the time lost during the continuance of the catamenia. As to the precise *mode* of application, I still follow that described several years ago. The bulb at the extremity of the probe or porte-caustique is first *well cleaned* with an emery cloth, then moderately heated in a *spirit*-lamp,

then dipped *rapidly* in and out of a little deep platinum cup, nearly filled with the molten nitrate (Squibb's cones most convenient), by which means a pear or olive shaped bulb of the nitrate is made to adhere intimately. For a uterus but slightly enlarged, six or seven grains will do for one application to the whole lining of the uterus and canal; sometimes a larger quantity is required. A probe, having a bulb somewhat larger than the bulb of nitrate, should be previously passed through the os internum, for we may, otherwise, have the nitrate arrested, for a short time, in the canal or at the os, which is sometimes thus provoked to such a degree of contraction as to prevent the further progress of the armed probe. The latter is then passed rapidly through the canal and os, and wiped firmly and methodically over all the diseased surface of the body of the uterus, in longitudinal lines, and then applied, in the same manner as it is withdrawn, to the canal, should that be also diseased. To make sure that the nitrate has reached the *fundus*, the armed probe should have a slight expansion at the distance of full an inch and a half (the usual length of the cervical canal) from its extremity, which, as it passes the os externum, indicates to the eye or the touch that the nitrate is passing the os internum. On showing the bulb of nitrate to Dr. Sims, on one occasion, he expressed surprise at the quantity used for one application. But, if the whole surface of a uterus, only moderately enlarged, is supposed to be diseased, and a thorough application is to be made to this and to the canal, less than six or seven grains will fail to secure the full benefit of the method. It is well to bear in mind, however, that the preparation above recommended is not all *nitrate*, but partly the oxide of silver.

As regards the *tolerance* of so severe a mode of treatment, on the part of patients, it may be added that ladies under my charge here, and thus treated, have, almost without exception, expressed their preference for it over the milder but more frequent applications to which they had been subjected by their medical attendants in the city, since they inferred, from their own observation, that the cure progressed more rapidly. Some very sensitive females assured me that it was not so much the *pain* they dreaded, as the mere fact of hav-

ing an application made, the exposure, etc. This fact is alluded to because one physician, largely engaged in this department of practice, said he feared that so severe a treatment would disgust his patients. I trust I may be excused, by those thoroughly conversant with this procedure, for entering into these details; but it is astonishing to what an extent the manner of arming the probe properly, and then of properly and certainly reaching the inner surface of the uterus, and of applying it there, simple as it appears, has been misunderstood even by intelligent and more or less experienced physicians. Those who will persist in using the rough and uncertain methods of applying the nitrate, formerly in vogue, and especially the extraordinary experiment of breaking off a stick of nitrate within the *cavity of the uterus*, and leaving it there, must expect results which will deter themselves and others from obtaining the beneficial effects which a more definite method will insure.

As regards the most safe and effective method of applying iodine and other *fluid* agents to the lining membrane of the cervical canal and the uterus, it may not be amiss to say a few words, as a very great diversity of opinion has been expressed, in the discussion of this subject, on this important point. I must confess that I never could understand how a comparatively mild agent, like the tincture of iodine and similar fluids, can be effectually applied by the means ordinarily, indeed, until quite recently, universally employed; that is, by twisting cotton on a probe or something of the sort, and dipping it in the fluid. After the saturated cotton has squeezed its way through the canal, not unfrequently tortuous, and filled with its thick and excessively tenacious secretion, the small amount of iodine, still left on the instrument, meets another coating of mucus, and can, as it appears, have, under these circumstances, but a very moderate effect on the diseased membrane itself; though the mere rubbing of the cotton on the often extremely sensitive membrane may make it *appear* a very severe one. A reapplication, or a succession, may, without doubt, be very effective, but the *mechanical* effect of so many reintroductions of the instrument would be likely, in some cases, at least, to counteract the good effect of the drug, since it is not uncom-

mon, as we have seen, to have the patient complain almost, if not quite, as much of the gentle exploration with the probe as of the application even of the solid nitrate. To overcome this difficulty, and to render entirely unnecessary, in most cases, any dilatation of the cervical canal, except such as, if necessary, may be effected in a few minutes by a flexible, conical bougie (French), or by the successive employment of the olive-pointed probes which I employ, Messrs. Otto & Reynders made for me, a year ago, as a *cotton-carrier*, a pure silver tube not much larger than a No. 1 catheter, with a minute opening at its extremity, and two minute slits in the sides near the end; this portion of the tube is roughened so as to hold the cotton securely. At the distance of an inch and a half from its extremity there is a slight expansion, as in the porte-caustique, and for the same purpose; the proximal end is terminated by a knob of hard rubber containing a female screw; into this is screwed, when needed, a hypodermic syringe containing the fluid required. Having pushed down the piston until the fluid has filled the tube, and just saturated the cotton, the latter is passed into the canal, previously explored or dilated by a bulb larger in diameter than the mass of cotton, or into the cavity of the uterus; and, after a few drops have been thrown into the cotton to replace that which the passage into the canal has displaced, it is to be gently wiped over every part of the diseased membrane. With a graduated glass syringe, or a graduated piston, the exact number of drops which has been found just sufficient to keep the cotton saturated, may be used. Finding that a tube of pure silver, so small, was likely to bend too readily, I had a stiffer tube of German silver made to envelop all but about three inches at its extremity. The connections should be all of hard rubber and not of metal, as the latter is very soon destroyed by iodine. The case should contain a different syringe for each chemical employed. This mode of employing iodine and other fluids, whether for the arrest of hæmorrhage, or as an ordinary application, may be considered as more effective than the ordinary injection; since, when the cervical canal is well dilated, as it *must* be to render an injection safe, the fluid cannot come so forcibly and completely in contact with the bleeding or diseased surface as

when it is directly applied there with the cotton freshly and repeatedly saturated. The carrier need be armed with but a slight covering of cotton, since the amount of fluid held by it can be so conveniently replenished (after introduction), which thus reduces the diameter of the instrument to such an extent that any previous dilatation of the canal is usually superfluous; and the whole operation, in such cases, after the patient is in position, and the speculum applied, need not require more than two or three minutes. I venture to affirm that, with this instrument, we may, except in those rare cases, in which the *os internum* is almost completely closed, get at least as much benefit as is obtained from the dilatation, the washing out by injection of water, and the subsequent injection of the medicated fluid, and thus dispense with the various tents, double tubes, and the other very ingenious contrivances for insuring the safety of injections. Dr. Peaslee, in his able article in the July No. of this JOURNAL, says: "But, whatever method is resorted to, the dilatation should be carried to at least three-eighths of an inch, whether the fluid is to be applied by injection or ingestion." With the instrument above recommended, the process need not be carried to more than one-third this extent, if required at all; since the portion of the instrument engaged in the canal, at the moment of application to the interior of the uterus, is only about one-fourteenth of an inch in diamater, and might be made still smaller by using coin-silver instead of pure silver. The great point of safety, I repeat, is the mere *saturation of the cotton* by pushing in the fluid drop by drop, which can, if thought necessary, be accurately measured. But, with *iodine*, the agent usually employed, as it does not coagulate the fluids sufficiently to interfere materially with its exit by the sides of the tube, we can *see* it trickle through the *os externum*, and thus know that we are proceeding safely. But the whole amount of iodine necessary to *saturate* the cotton, again and again, is not as much as would fill the cavity of a uterus, which has gone through the process of parturition, and yet its thorough application to every part of its lining membrane can be made certain.

The use of *ointments*, for the relief of internal uterine in-

flammation, was but slightly touched upon in the discussion. Prof. Fordyce Barker, who has had considerable experience with this method, referred to the great benefit which he had derived from the sulphate of zinc in the form of ointment. Being aware of the unirritating and rapidly-healing effects of *calomel* applied to external ulcers, and some cutaneous affections of an extremely obstinate character, I was led to employ a strong calomel-ointment for the interior of the uterus, and with good effects; but the occasional occurrence of its constitutional manifestations of quite severe character, from a very small quantity of it, is a great drawback to its use.[1] Prof. Barker informed me, some time ago, that he had been in the habit of using it in conjunction with the oxide of zinc, and with the most gratifying success. The application of drugs, by means of this vehicle, is, perhaps, the mildest of the effective methods. Ointments appear to me to possess at least three advantages over any other form of injection or "ingestion:" 1. By their use, we may apply drugs which we cannot otherwise employ: as calomel, oxide of zinc, and other *insoluble* substances. 2. The ointment, passing, as it must do, *slowly* through the small side-apertures of the tube, is in no danger of producing that sudden and painful stretching which sometimes follows the injection of fluids; it finds its way back by the side of the tube, and appears at the external os the moment it meets with the slightest resistance, since it produces no immediately-coagulating effects, whatever the agent employed. 3. The effect on the mucous membrane of the uterus is slow and gradual, and therefore much less likely to be followed by those sudden and alarming fits of prostration which are known to attend, though rarely, every other method of application. The ointment-syringe suggested by the writer several years ago, and described and figured in Prof. Thomas's work, first edition, p. 249, affords a very ready means of using ointments. The small size and flexibility of its pure silver

[1] The rapidity with which *iodine* is sometimes absorbed, even from the cervical canal, is remarkable; one patient could taste it within a minute after its application. I have never known any unequivocal instance of the absorption of the nitrate of silver, when used in the solid form. It might occur from a weak *solution*, as suggested by Dr. Nott.

tube gives it a great advantage over Prof. Barker's larger and more rigid tube, especially in cases of flexion; and one charge of its chamber will suffice for several applications. Some one has recently improved it by making the chamber of glass, which enables us to see if any bubbles of air are drawn up with the ointment, though the calibre of the tube is so much reduced that the ointment cannot well be introduced with a spatula, as recommended by Dr. Thomas, but must be forcibly sucked up in a semifluid state by a sudden movement of the piston.

The *arrest of hæmorrhage* from the uterus, complicating chronic affections of its lining membrane, occupied a considerable share of Dr. Nott's paper, and of its discussion; and, among the various means suggested for its arrest, it is somewhat remarkable that, perhaps, the most efficient of all, undoubtedly so in a certain class of cases, should not have been alluded to. I refer to the partial or entire removal of the lining membrane of the cavity of the uterus with the *curette*. But, first, let us briefly consider the means suggested. These were principally the tampon, or tent in the cervical canal, medicated or not, and certain intra-uterine injections. The simple introduction of even a large sponge-tent I have found inefficient in stubborn cases, since, after the dilatation has proceeded to its full extent, the hæmorrhage recurs, the blood probably finding its way both around the surface of the sponge and through its substance. If, as was suggested, cotton, soaked in liquid persulphate of iron, be thrust into the cervical canal, and held there for a time, we have, as Dr. Kammerer justly styled it, a "stopper in the full bottle," and the hæmorrhage is, for the time, arrested. But the uterus is not always tolerant of such a condition, and very unpleasant symptoms may continue until the cork is removed and bottle emptied. Of course, we would all prefer, if we had the option, to arrest hæmorrhage by direct application to the bleeding point. This is a well-established surgical principle; but, to do this, in the case of the bleeding uterus, is not easy, as one may readily infer from the remarks and suggestions, on this point, by the very distinguished specialists who alluded to it, and the silence of those who did not. *Iodine*, either in the form of tincture,

or of Churchill's solution, appears to have presented itself as the most reliable styptic, and its injection, either with or without the previous cleansing of the bleeding surface, the most efficient means of its application. To secure the action of most styptics, "it is necessary," to quote the language of Dr. Nott, "to keep them, for some little time, against the bleeding part." This is precisely the reason why the liquid persulphate of iron, so safe and admirable a styptic in external hæmorrhage, so frequently fails within the uterus, except occasionally by the indirect and temporary method of forming a coagulum in the canal, which, as Dr. Nott suggests, may act as a tampon. Dr. Emmet places great reliance on the tincture of iodine, and, acting on his advice, I have found it superior to other fluids. But, even when I have washed out the uterus with iced-water, after previous dilatation of the cervical canal, I have sometimes failed in permanently arresting the hæmorrhage with Churchill's tincture. What, then, is to be done? Perhaps this question can be best answered by relating, as briefly as possible, a case in point:

I was called to Mrs. P., aged forty-seven, March 20, 1869. Health always good until the advent of her present trouble. Has had eight children, two miscarriages. Has always suffered from dysmenorrhœa, and for some years has had slight leucorrhœa, but catamenia always regular in other respects, until last June; at that time they became profuse, and have been irregular, and gradually increasing in quantity since; also suffers from various pains; is anæmic and very feeble, having eaten but comparatively very little food for some time; her headaches are frequent and intense. States that her catamenia appeared two weeks ago, and have been profuse and uninterrupted to this time; discharge thin and dark. ℞. acid. gallic. gr. x. q. 2. h., rest, cold drinks, etc. *March* 21*st.* No better. On vaginal examination, the cervix is found to be soft, flabby, enlarged, the os dilated, and the seat of extensive granular ulcerations. Uterus measures three and a half inches; not tender on pressure; *os internum* much dilated. Packed some damp cotton, saturated with Monsell's styptic, into the cervical canal, and tamponed the upper part of vagina to insure the retention of the plug *in situ*. *March*

22*d*.—Hæmorrhage checked for some hours, but has recurred. Removed plug, and replaced a fresh one, and tamponed the vagina thoroughly through the speculum. Directed to apply cloths wrung out of iced-water. Take liquid ferri persulp. gtt. x. q. 2. h. *March* 23*d*.—Hæmorrhage checked for a few hours, but now going on as usual, not rapidly but continuously. To take ℞. ergotæ ext. fl., acid sulph. ar., āā. ♏xv., tinct. lavand. c. ♏x., tinct. matico ʒj, M. in water, q. 2. h. Removed plug, applied a sponge-tent, and again tamponed. *March* 24*th*.—Hæmorrhage not so great. Tent has not succeeded well; very little expansion. Applied solid nitrate of silver to the granular surface of canal, injected tincture iodine (double strength of U. S. D.) into the uterus, applied a better sponge-tent, and a sufficient plug to retain it *in situ*. *March* 26*th*.—Dr. Murdock saw patient yesterday, in my absence; found the hæmorrhage proceeding about as usual; applied a large tent, by my advice, with the object of thoroughly dilating the canal and body of uterus, but only succeeded in getting it partly through the canal, owing to its large size; he also applied some cotton, soaked in persulphate of iron, around the cervix. To-day, patient complains very much. There has been less bleeding, but she has been restless and sleepless, nervous, and nauseated; secretes but little urine and has difficulty in voiding it, only a spoonful at a time; pulse soft and feeble. Removed plug and tent. The usual dark thin blood poured from the os. Introduced Recamier's curette, and scraped the whole internal surface of the uterus. It did not have the soft, boggy feel of vegetations, and only one or two strips of thickened lining membrane were observed to pass from the os after the operation. Patient complained very much of pain during the operation, but it ceased immediately after. I now passed a large elastic catheter into the uterus, and washed it out thoroughly with iced-water, until it passed away almost colorless; then injected it freely with tincture of iodine (double strength U. S. P.). Patient did not complain of even an uneasy sensation during these injections, and of none succeeding them. On putting her to bed, she felt no worse, and her pulse was noticed by Dr. Murdock to be stronger and not accelerated; no soreness over hypogastrium. Discontinued other treat-

ment. *March 27th.*—Has been *quite comfortable* since yesterday; no soreness whatever, no hæmorrhage, no nausea, pulse 70, and better. To take a tonic pill *ter die*. *April 1st.*—Has had no discharge of any kind, and has been rapidly improving in strength. Wishes to get up. *April 9th.*—Still doing well. No discharge. On examination, the ulceration is found to have diminished in extent. The treatment of the diseased membrane was continued by the application of Churchill's tincture to the canal and fundus, and the patient completely recovered in a few weeks, and has required no treatment since, her catamenia continuing regular.

Dr. Nott, in his paper, says: "The most effective way to control uterine hæmorrhage is to inject iodine, and then plug the cervix with cotton and persulphate of iron." This is true as regards the *immediate* arrest of the bleeding, and, often, is all sufficient. But cases are, every now and then, occurring, in which the hæmorrhage recurs after this has been done. In these cases, the curette will succeed, though the operation may, in some instances, after the lapse of several weeks, require repetition; and this treatment has the advantage of being applied directly to the seat of mischief, and not indirectly through the intervention of a cervical plug, and may also be relied upon as not only palliative but as tending to *cure* the pathological condition which is the cause of the hæmorrhage. It is singular that this treatment, as in the case of the solid nitrate, so effective and so safe as it has invariably, I believe, shown itself to be, should be so little appreciated by the profession, if one may judge from its silence regarding it. Prof. Thomas, in his excellent treatise, dismisses the subject with a very brief notice, and largely restricts the application of the treatment. I was induced to adopt the practice, in the very exceptional cases requiring it, in consequence of the strong recommendations of M. Nélaton[1] as to its efficiency and safety. He gives the following as a reason why the practice has met with so few advocates: "The surgeon might be tempted, from the small amount of tissue brought away by this operation, to think that it had nothing whatever to do with the cure; but I

[1] Clinical Notes on Surgery, edited by Walter F. Atlee.

have seen too many such cases to have any doubts about it." Again: "The reason why some surgeons reject the operation, why it does not enter into ordinary practice, is because sometimes the fungosities are so small in quantity that it is not believed that their extraction can afford such great relief. Whatever be the theory, however, as to the action of the curette, one thing is certain—observation shows that the patients get well after its use." My own experience, moderate though it be, in this matter, has taught me that the reliance which I have been accustomed to place in the judgment and candor of this eminent surgeon and diagnostician has not been misplaced here. I have been surprised (and should have been deceived but for the above caution) at the very small amount of tissue removed, in some of the cases, as in that of Mrs. P., and yet followed by results which treatment, usually considered very efficient, had failed to effect; also at the comparatively moderate amount of pain suffered at the time, and the almost complete immunity from pain and constitutional disturbance, after the operation. In a case of most obstinate and persistent hæmorrhage, which I have recently had under treatment, in consultation with Dr. McParlin, U. S. A., at West Point, the patient has declared that she suffers much less from this than from the previous injections and applications of iodine, etc. I have seen fit to quote the above sentences from Nélaton's notes, and to dwell particularly on the above facts, because they indicate a much wider range of usefulness for the operation than has usually been allowed. The very name which has been applied to the disease, for the treatment of which it has been advised, has conduced to this result. "Fungosities," and "vegetations," and "small polypoid excrescences," do exist, and come away in considerable quantity in some exceptional cases, but in the majority, to which the operation may, with great advantage, be applied, and in which it may be eminently successful, there may be no evidence, either before or after, of their existence. I have brought away, with the scoop, several drachms of these vegetations at one application; and again, only a few strips of smooth, thickened membrane congested and ecchymosed, and with the same result in each case—the arrest of the symptoms.

What are these "fungosities?" Nélaton uses the term merely as a convenience. He says, "they are, in reality, only parts of the mucous membrane itself."[1] He begged the class "not to preoccupy themselves with these words." I quote the following description of the arrangement of the vascular system of the lining membrane of the uterus from Dr. Nott's article, as given by Dr. Arthur Farre:[2] "The arrangement of the capillary vessels is peculiar and characteristic. The capillaries, which are of large size, usually descend between the canals of the uterine glands, giving to them a few small branches in their course. Having reached the surface of the mucous membrane, they spread out into a mesh-work of round, oval, and hexagonal spaces, in the centre of each of which may usually be observed the orifice of the uterine gland.

"The net-work of capillaries thus formed lies *very superficially with regard to the uterine surface*, the layer of epithelium covering them and the nuclear corpuscles, and amorphous tissue supporting them, appear to have so little cohesion, and to form so slight a protection, that *the vessels are often seen to be nearly bare*, while, in some instances, the individual capillaries may be observed *hanging out loose* in the uterine cavity, and giving to its surface a villous appearance." One may readily conceive how hæmorrhagic a surface, thus circumstanced, may become, and how difficult to control the flow permanently without destroying the vessels themselves; also how difficult, nay impossible, to appreciate this condition accurately by any means but the digital touch, if even by that, as is the case with the granular os. But a slighter degree of thickening of the membrane and relaxation of the vessels will sometimes give rise to a most intractable hæmorrhage, and call as imperatively for the curette. In some of my cases, as for instance, in one now under treatment, and already alluded to, which had been under the care of competent physicians for a year, and had had tents, injections, etc., without any check to the hæmorrhage, the application of the curette arrested it at once, for a considerable time, and two repetitions enabled the patient to get out of bed, and go about her business, and

[1] M. Robin, Archives Gén. de Méd., also describes them as such.

[2] Cyclop. of Anat. and Phys.

promise a cure within a reasonable period; and yet at no time were more than a few strips of thickened membrane brought away by the curette. I treated this case in conjunction with Drs. McParlin and V. B. Hubbard, of the U. S. Army. Prof. Thomas, in his deservedly popular treatise, says, of this condition, which he styles "fungous degeneration," that it "must be clearly diagnosticated, not surmised, but absolutely ascertained by the touch to exist." In this case he recommends that "the canal should be fully dilated at intervals of about a week. . . . Should this plan, persisted in for three or four months, fail, full dilatation should be secured, and the whole mucous lining scraped gently by one of the curettes. . . . After this, at intervals of a week, the cervix should be dilated, and the whole cavity painted freely over with the solution of persulphate of iron, a strong solution of nitrate of silver, or Churchill's tincture of iodine." This rule of action would restrict the operation to but a small number of those very troublesome cases to which it is really applicable; and the application of tents, for so lengthened a period, would probably result in an infinitely greater amount of pain and danger than the final operation, which he seems to allow as a sort of "forlorn hope." We all know how painful and annoying tents usually are, especially when they require constant repetition, and that death even has been the result. Whereas, Nélaton asserts that the operation of denudation has been done "thousands of times," "and in one case only did any bad consequences follow; the autopsy showed that these could hardly be attributed to the operation, but were probably only a coincidence." Nature often performs this operation more thoroughly than the surgeon, since, "in pregnancy, and membranous dysmenorrhœa, the mucous membrane is thrown off entire, *utricular follicles and all.*—(*Nott.*) M. Nélaton says, with regard to *diagnosis*, that it is rather by *exclusion*. As a general rule, the operation would only be performed in such cases as had *resisted other means;* and this very circumstance, coupled with a knowledge of the non-existence of any of the other causes of hæmorrhage, such as we are readily able to diagnosticate, would lead us to a correct diagnosis. But, in many cases, we *can detect* a thickened, villous, or boggy feel of

perhaps only a portion of the lining membrane of the uterus, when other portions are comparatively healthy, by passing the curette gently over it; the sensation communicated to the hand, in one condition, being quite different from that in the other. As regards the application of iodine and nitrate of silver after the scraping, I applied the solid nitrate in one case immediately after, and in others, Churchill's tincture. It is somewhat remarkable that the effect of these applications, at that time, has invariably been far less painful than after ordinary applications; owing probably to the sensitiveness of the inner wall being somewhat impaired by the destruction of its lining. Nélaton and Thomas allow a week or more to elapse. I doubt if any thing is gained by any application immediately after the scraping, if this has been thoroughly done, or by applications after an interval, unless the purulent discharge, which may succeed the operation, should continue an unreasonable time. Even when the hæmorrhage is actually going on, and when other less violent manipulations had only increased it, I have found that the operation very commonly checked it *at once*, so that, after waiting, with the os uteri exposed for some time, not a drop of blood has passed out. This I suppose to be due to the fact that the enlarged, flabby capillary net-work and loops, described by Farre (*op. cit.*), have been cut or torn off. It is difficult to convey an idea of the amount of force used in what may be termed a thorough application. If Recamier's instrument be employed, the force required is greater than that with the curette of Sims, which has a thinner edge. The former may be considered the safer instrument, while the latter has some advantages, and is applicable to certain cases, especially when the other has failed, after two applications, to permanently check the hæmorrhage, which is rarely the case, or when the very small pediculated polypi are supposed to exist, since the blunt instrument might readily slip over some of them, without cutting them off, whereas the other, being sharper, and in the form of a cutting ring, might readily catch them. If the abdominal parietes are thin enough to allow the uterus to be readily felt and fixed by the left hand, the amount of force employed can be better appreciated than is the case when the patient is very obese,

or when the operation is done, as it may be, through the speculum.

Of *internal scarification of the uterus*, so highly recommended by Dr. H. R. Storer, of Boston, in the treatment of those forms of uterine disease considered almost, if not quite, incurable by the mass of the profession, I have had but little experience. It has safety and comparative painlessness to recommend it. I have not been favorably impressed with Dr. Storer's arguments and deductions in support of the operation. But he claims that both he and Dr. Miller, of Dorchester, the inventor of the intra-uterine scarificator, have had a wonderful degree of success. Other Boston physicians have spoken highly of the treatment. In a case formerly under my charge, and now managed by Dr. Murdock, my assistant, relief seems to have followed the scarifications.

For the relief of very rebellious and harassing cases (harassing alike to the patient and her medical attendants) of chronic metritis, affecting all the tissues of the organ, attended by hypertrophy, almost always by flexion or version, generally backward, with severe constitutional symptoms, I venture to suggest a method to the profession for trial, which, so far at least as my knowledge extends, has the merit of novelty, if no other.[1] It consists in the introduction of a *seton deeply through one side of the cervix*, with the expectation that the somewhat profuse purulent discharge, which may be expected, will melt down the induration, the interstitial deposits, the hypertrophy, or other consequences of prolonged inflammation, and thus remove those distressing symptoms, characteristic of these conditions, which render the patient's life a burden. I inferred, from the almost complete immunity from danger which usually attends operations on the cervix below the *os internum*, that the procedure would, at least, be free from risk.

The first case, in which I ventured to put this plan into execution, was that of a woman who had suffered more or less at intervals, for several years, from uterine disease, having been

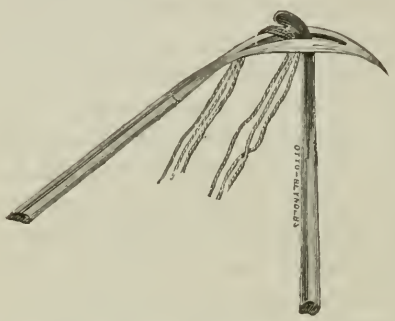
[1] Issues have long ago been employed; but the effect of an issue is far less radical than that of a seton.

at times under my care, and at times under that of other physicians. Had been subjected to almost every variety of constitutional and local treatment, including some applications to the cavity of the uterus. At times, much improved for several months, and at times relapsing, generally from the most imprudent acts on her part. The uterus, at the time of the operation, January 4, 1870, was enlarged, very much retroverted, and very tender, but the cervix healthy; she was suffering from an unusually severe train of symptoms—pain and tenderness all over the abdomen below the level of the umbilicus, in the hips, sacrum, etc., violent headaches, great nervousness, and a frequent nausea and vomiting. With the assistance of Dr. G. W. Murdock, who introduced and held in position Sims's speculum with the patient in Sims's position (semiprone decubitus), I introduced, through the posterior wall of the cervix, at a height of full one-half an inch from the os, a seton of six coarse threads of silk, and tied the ends so that the knot should be just within the vulva. I extract the following notes of the case from my note-book: *January 6th.* Since the morning after the operation, has felt better "in every way;" much less pain and tenderness over the abdomen. *January 15th.*—Says she is better than she has been for some months: no pains, is going about the house and street, is cheerful, and states that she has gotten rid of a dreadful but indescribable sensation, which has troubled her for many months. The discharge is "laudable pus," very abundant, and threatens to excoriate the vulva. To use enemata of salt and water, *per vaginam, bis die.* *January 26th.*—Has continued remarkably well; no complaint of any kind until to-day; she has now some headache and backache. There is a profuse purulent discharge from the wound, which does not now irritate the genitals. The cervix and the ulcer look perfectly healthy. *January 28th.*—Has been doing well. *February 4th.*—Her old symptoms are threatening to return. The uterus, on examination, is found to be rather more enlarged than it was at the date of operation, and the fundus is very tender on pressure. Removed the seton. *February 11th.*—Symptoms about the same. On questioning the patient closely, find that her catamenia ceased twelve days before the date of operation, and

that her husband had intercourse with her a day or two after. It is probable that the enlargement of the uterus, and also the accompanying symptoms, are due to conception. I will conclude the case by stating that any doubts concerning her pregnancy have long since been removed. She is going on as well as the majority of multiparæ. No comments on the case are needed. The only other cases, in which I have applied the seton, are two in number, and were not successful. Neither of them, however, was in the pathological condition to which this treatment may be considered as peculiarly appropriate. They had had repeated relapses, had a complication of diseases, and had exhausted every other means of relief, and this was employed as a sort of "forlorn hope." In one of the cases, the uterus was excessively irritable; the passage of a probe through the *os internum*, which has always been very much contracted, causing always excessively severe pain; not hypertrophied; cervix healthy. Patient had never borne children. With Dr. McParlin, U. S. A., in consultation, and, with his assistance, I operated precisely as in the last case. The symptoms under which the patient was laboring were rather aggravated; but no healthy, purulent discharge was ever established. After the lapse of several days, patient was attacked with metrorrhagia, and I removed the seton. Rest and cold applications subdued the flow; and, after the active symptoms had subsided, two applications of Churchill's solution to the cavity of the uterus benefited the patient, so that she has been able to do more work and walk farther than she has done for several months. The second case was somewhat similar; but, by mistake, the seton consisted of only four threads. Only a very slight and somewhat offensive discharge was established, and as the symptoms were not benefited, and the cervix, which was nearly healthy when the seton was introduced, somewhat inflamed, the latter was removed after the lapse of a fortnight. There was no evidence, in either case, of any pelvic inflammation. I have thought it incumbent on me to give the results of all the cases.

The seton-needle, which I have contrived for this little operation, and which was manufactured by Otto & Reynders, of 64 Chatham Street, is very similar to Mott's or the Ameri-

can aneurism-needle, except that it is sharp-pointed, and has cutting edges, and it is manipulated in the same manner. As soon as the point is pushed well through the wall of the cervix, the hook is passed in, as represented in the accompanying engraving (full size), the shank of the instrument is unscrewed, and the needle with the seton drawn through. As the needle is armed with three threads, the seton, of course, consists of six. In case the *os externum* is not patent, the point of the needle may catch in the lining-membrane of the cervix, before it has passed to a sufficient depth, which should be one-half to three-quarters of an inch. To prevent this, the point may be armed with a bit of yellow wax.



Note.—The hook, by mistake, is represented as turned in the wrong direction.

There seems to be no reason to fear that this treatment, so simple and easy of application, will be attended by more danger of unpleasant consequences, in properly-selected cases—cases, too, which are confessedly rebellious to all other management—than other means now being generally employed by the profession. It is, therefore, with the hope that it may be considered of sufficient importance to justify a fair trial, that I now present it to the public, before having sufficient experience with it myself to pass sentence on its merits.

In conclusion, I have only to add that the instruments and the treatment herein recommended—that is, the porte-caustique and the cotton-carrier—are as important and convenient for the management of endocervical disease, as for that affecting the lining membrane of the fundus, in some respects even more so, since the greater amount of mucus, secreted by the

diseased membrane of the cervix, and its greater tenacity, render its removal almost impossible; while the peculiar anatomical arrangement of this membrane also renders it particularly difficult to reach the bottom of its folds and inequalities by the ordinary methods of application. In common with others who have lately treated of this subject, I consider that the cases which require applications to the *endometrium* are exceptional, but not to the extent which these writers seem to suppose. I also quite agree with the closing sentence of Dr. Peaslee's article, already referred to, namely: "Applications to the endometrium demand a delicate surgical dexterity; and those who possess neither tact nor experience, in this direction, will probably produce more mischief than benefit by their use."

Art. II.—*On the Internal and External Use of Mineral Waters.* By Adolph Kessler, M. D., New York City.

(Continued from the August number, p. 64.)

When hydrology began to assume the character of a science, the necessity of systematically arranging the endless number and variety of mineral springs was urgently felt, and efforts thus made to group the scattered members of the various families under common heads. Brongniart's geological classification, although rational, found no general acceptance, from the fact that, based as it was upon the geological formations in which the springs receive their mineral and gaseous impregnations—such as waters issuing from and belonging to the lower crystallized, the transition, the three sedimentary, the porphyritic, the trachytic, basaltic, and volcanic strata—it appeared altogether too indefinite and unsatisfactory for the purposes of a discipline so purely medical as balneo-therapeutics. The so-called *therapeutic* classification met with no other fate, and deservedly so, because moving in an opposite extreme. This classification gave to mineral waters a determinate pharmacodynamic character, and arranged them, like the ordinary remedies of the materia medica, under the heads of tonics, excitants, sedatives, etc. The curative agents prepared in the vast and mysterious laboratories of Nature are very

complex in constitution and different in temperature, and do not on that account, unlike iron, opium, quinia, etc., exhibit single effects; they exercise rather, with rare exceptions, combined effects, and these are again modified by various modes of employment. Osann was the first to recognize the fact that the specific individual character of a spring and the indication for its special use depend on its physico-chemical constitution alone, and the first to introduce the now universally-accepted chemical classification which defines in a precise and satisfactory term the specific or dominant character of a water, and designates its exact place as a body and as a medicine.

He divides mineral waters into nine distinct groups, each one taking its name from the element predominating either in mass or in effect, viz.: 1. Chalybeate; 2. Carbonated;[1] 3. Alkaline; 4. Sulphurous; 5. Chloride of sodium; 6. Bitter salt; 7. Glauber salt; 8. Calcareous, and 9. Indifferent thermal waters, and these chief classes he subdivides under secondary heads, according as important ingredients modify to a considerable extent the effect of the principal element. For, be it remembered, mineral springs arec omplex bodies, κατ' ἐξοχην, holding in solution nearly all the animal, vegetable, and mineral matter found on earth. Among their leading constituents are iron, especially the protoxides and oxides, manganese, the numerous salts of soda, magnesia, lime, sulphur, alumina and silica, carbonic acid, nitrogen, and sulphuretted hydrogen; much less frequent are iodine, bromine, arsenic, strontian, lithia, potassa, ammonia, fluoride of calcium, sulphuric and phosphoric acids, oxygen, carburetted hydrogen, etc., and very rare zinc, copper, tin, lead, antimony, and others. Organic matter, invariably in inferior proportions, appears in the form

[1] Following the example of recent hydrological authors, we drop the carbonated waters as a distinct and independent class. Their claim to that position falls to the ground when we consider that many chalybeate and alkaline springs are richer in carbonic acid than those that have been designated as acidulous or carbonated proper. The waters mentioned as such in European and American works belong, in fact, either to the group of alkaline or ferruginous—like Vichy and Pyrmont—the number of pure carbonates being very insignificant. We shall therefore adhere to a strictly and consistently chemical classification.

of gelatinous, saponaceous, humus, resinous, and animal extractives (zoogen, glairine, theiothermine, and barégine).

I. **Chalybeate or Ferruginous Waters** (*Chalybopegæ*).—This class contains in solution the one or the other salt of iron, usually the carbonate of the protoxide, and in quantities not below one-half a grain in sixteen ounces. Of other ingredients the most important are carbonic acid, the carbonates and sulphates of soda and lime, sulphate of iron and alumina. Although iron requires a good digestive power, it is readily borne by the stomach, and quickly conveyed to the organism in the medium of the milder chalybeates, that is, in those abounding in carbonic acid and alkaline salts, and deficient in the sulphates and alumina. They promote the energy of all the functions, sustain the system against inordinate losses, improve the quality of the blood by increasing the number of red corpuscles, and strengthen the entire organism. Chalybeates, usually of cold temperature, limpid, inodorous, and of an astringent, inky taste, are indicated in anæmia and chlorosis, in nervous diseases, passive hæmorrhages and blennorrhœas, atony of the mucous membranes, in scrofulous and tuberculous cachexies, in debility, convalescence, and after an exhausting medical and mineral-water treatment; they are contraindicated in plethora, in inflammatory and asthenic fevers, in the florid forms of phthisis, in acute gastric and dyspeptic disorders, and during pregnancy.

1. *Pure chalybeates* are characterized by containing leading proportions of protoxide of iron and carbonic acid, and by being deficient in solid constituents; they are therefore indicated in strongly-marked cases of anæmia and chlorosis, where the tonic, blood-improving effect of iron is chiefly needed. There being no salts present that excite the bowels to undue action and check resorption, as laxatives do, these waters have a chance to display their full and undisturbed power as givers of tone and restorers of tissue. The most noted of the class of simple chalybeates are *Spa*,[1] in Belgium; *Schwalbach*, *Altwasser*, Brückenau, *Reinerz*, Imnau, etc., in

[1] We italicise the leading springs of Europe that enjoy a wide reputation, and all those belonging to this country.

Germany; Camarès and Bussang, in France; Nocera, in Italy, etc.

2. *Alkaline and alkalo-saline chalybeates* contain, besides protoxide of iron, considerable amounts of carbonate and sulphate of soda and carbonic acid, and are indicated in all cases where the combined effects of tonics, aperients, and resolvents are required, as in the various disorders of anæmic and decrepit individuals, that depend on circulatory disturbances in the abdominal organs, such as intestinal catarrhs, liver-complaints, hypertrophy of the spleen, piles, hypochondriasis, hysteria, etc. Leading springs of this kind are *Franzensbad*, Elster, Cudowa, Flinsberg, etc., in Germany; Cheltenham (chalybeate), in England; Sermaise, in France, etc.

3. *Earthy saline chalybeates* contain, besides carbonates of iron and sulphate of soda, chiefly the carbonates and sulphates of lime, elements scarcely inferior to iron, and entering even more largely into the constitution and preservation of the organism. A system reduced by profuse excretions and secretions, and whose nutrition has greatly suffered, requires for its reparation not only the use of iron, but also of the sulphurous and calcareous salts, which supply a considerable amount of organic matter, and in such cases this class of chalybeates proves highly useful.

The best-known and most efficacious are *Pyrmont*, Driburg, Rippoldsau, Bocklet, Wildungen, etc., in Germany; *St. Moritz*, in Switzerland; Forges-les-Bains, in France; *Bedford*, in Pennsylvania;[1] *Sharon* (chalybeate), in New York; the *Sweet Springs*, in Virginia.

[1] It is not the writer's fault that so few of our numerous springs are mentioned in this paper; he examined and compared as many analyses as he could procure, but a small number only appeared reliable and vouched for by high authorities. Although this country is second only to Germany in the wealth, variety, and efficacy of its mineral springs, yet but few have been thoroughly analyzed and placed in the ranks of recognized therapeutic agents, while the overwhelming majority are proclaimed in high-sounding phrases, based upon fictitious analyses and cures, as panaceas against all evils the human flesh is heir to. Since, however, all the leading European waters have been scientifically analyzed and can be easily procured here either in their natural form or artificially prepared, his effort of drawing the attention of the profession to these wonderful remedials may

4. *Vitriol and alum-waters* contain, with other ingredients, chiefly sulphate of iron and alumina, but no carbonate of soda, and very little carbonic acid; this composition renders them very difficult of digestion and almost unfit for internal use. As powerful astringents and styptics they are advantageously employed, especially in the form of baths, douches, and injections, in profuse secretions, passive hæmorrhages from the uterus and rectum, in atony of the mucous membranes, inveterate ulcers, and other torpid affections of the skin. Such waters are *Alexisbad*, Muskau, and Mitterbad, in Germany; Parad, in Hungary; *Brighton* and Sandrock, in England; Hartfell and Moffat, in Scotland; Ronneby, in Sweden; *Rockbridge* and *Church Hill Alum Springs*, in Virginia.

II. **Alkaline Waters** (*Natropegæ*).—This class is characterized by containing as principal elements carbonate of soda and carbonic acid, and in smaller amounts carbonate of lime, sulphate of soda, and chloride of sodium. They are cold and thermal, clear, often sparkling, have sometimes a strongly-alkaline taste, and are administered internally and externally. Chiefly operating upon the mucous membranes, the glandular and lymphatic systems, the skin and kidneys, they regulate secretions, resolve glandular tumors, liquefy the blood, counteract the formation of acids and concretions, increase the discharge from the kidneys, and calm the excited nervous system. Their effect is diuretic, antacid, antilithic, resolvent, and sedative, and they are therefore excellent curative agents in many diseases, especially in acidity of the stomach, in certain forms of dyspepsia, in arthritis, lithiasis, biliary calculi, induration of the glands and uterine tissue, in chronic catarrhal affections of the mucous membranes, diabetes, chronic skin-diseases, and nervous disorders. Hydræmic and scorbutic conditions, hectic and suppurative fevers, and great debility, contraindicate the administration of alkaline waters, and even when rightly indicated they should be used only for a limited time, as an ex-

not prove altogether futile. The artificial mineral water establishments of Dr. Hanbury Smith and Schultz & Warker, of this city, deserve especial mention, and their waters may be considered fully equal to those prepared by Struve & Soltmann, and other leading firms in Europe.

cessive ingestion is apt to dilute and impoverish too much blood and tissues.

1. *Pure carbonated or acidulous waters* are deficient in solid constituents, but distinguished by an excess of carbonic acid, that cannot be less than twelve, and varies from twelve to sixty, cubic inches in sixteen ounces. They are all cold, and principally administered internally, for dietetic purposes, in torpid digestion and dyspeptic complaints, but prove also highly efficacious in the form of gas-baths, as the carbonic acid exercises a tonic and animating influence upon the cutaneous nerves, and improves a deficient innervation.

To this class belong the acidulous springs at Liebwerda by Brückenau, the Marienquelle at Marienbad, the Sauerbrunnen by Karlsbad, etc., in Germany; and St. Remy, in France.

2. *Alkaline-carbonated waters* contain large amounts of carbonate of soda and carbonic acid, with inferior proportions of other ingredients. They are chiefly noted for their power of improving or restoring the impaired digestive functions, and of promoting the elimination of gravel and renal calculi, etc., and are indicated in all forms of dyspepsia, in all chronic catarrhal affections of the mucous membranes, in arthritis, lithiasis, and other diseases of the bladder, in morbus Brightii, diabetes, biliary calculi, and in the milder forms of abdominal plethora.

Examples of this kind are the famous thermal springs of *Vichy*, France, and Neuenahr, Germany, and the cold springs of *Bilin*, *Fachingen*, Gieshübel, Geilnau, Rodna, etc., in Germany; and Hauterive, in France.

3. *Alkaline-muriatic-carbonated waters* contain, besides carbonate of soda and carbonic acid, leading proportions of chloride of sodium, thus combining the effect of alkaline and saline springs. They operate like the preceding class—as antacids, antilithics, and resolvents—and are employed in the same diseases, but by their large amount of chloride of sodium they are also stimulant tonics and alteratives, and the field of their usefulness is accordingly enlarged. Special indications for their use are digestive, nutritive, and catarrhal affections in scrofulous individuals, incipient tuberculosis, pleuritic and peritonitic exudations, and chronic metritis and oophoritis (hysteria, menstrual anomalies).

The famous thermals of *Ems*—internally, gaseous inhalations, uterine douche—in Germany, and those of *Mont d'Or* and St. Nectaire, in France; the cold waters of *Selters*, *Luhatschowitz*, Gleichenberg, Weilbach, Natronquelle, etc., in Germany, belong to this class.

III. **Sulphurous Waters** (*Theiopegæ*).—This class takes its name either from the metallic sulphides (sulphurets), held in solution, or from the free sulphuretted hydrogen, which is formed by the decomposition of the salts in their union with organic matter. Although they are chiefly characterized by the peculiar fetid smell of that gas, it is usually present only in a very small volume, and the effect of sulphur-waters must therefore be ascribed rather to the solid constituents, which are various and abundant, and to the nitrogen. The sulphated and carbonated earths and alkalies hold a conspicuous place in their composition; iron and manganese are next in rank, and iodine is an important ingredient in some. According as these secondary chemical groups predominate, the waters are called, 1. Alkaline-muriatic; 2. Alkaline-saline; 3. Earthy-saline, and 4. Chalybeate-saline, sulphurous. The effect of sulphur-waters is naturally modified by the presence of various salts—some being laxative in consequence of their large proportions of chloride of sodium and sulphate of soda; and others, again, constipating by their considerable quantities of carbonate and sulphate of lime—but they operate all as diaphoretics, diuretics, alteratives, expectorants, and resolvents, while some are also tonics. Experience has proved them to be efficacious in chronic bronchial catarrh, in hepatic disorders involving the secretion of bile, in torpid abdominal venous circulation, piles, in chronic rheumatism and atonic gout, in diseases of the cutaneous surface, chronic poisoning by metals, and as adjuvants (and diagnostic criteria) in syphilis. They are cold and thermal, and employed internally and externally, in baths, douches, vapors, and fomentations, the latter by the strongly-mineralized residual *sulphur-mud*.

The most noted thermals are: *Aix-la-Chapelle*, Burtscheid, and *Baden*, by Vienna, in Germany; *Mehadia*, *Ofen*, and Töplitz, in Hungary; *Baden* and *Schinznach*, in Switzerland; *Barèges*, *Aix-les-Bains*, Eaux Bonnes, and *Cauterèts*, in France;

Abano and *Acqui*, in Italy, and the "*warm*" and "*hot*" *springs* in Virginia; the leading cold sulphur-waters, *Nenndorf*, Eilsen, Meinberg, *Weilbach*, etc., in Germany—all rich in mineral sulphur-mud; Stachelberg and Le Prese, in Switzerland; Enghien, in France; *Avon* and *Sharon*, in New York; the *White*, *Red*, and *Salt Sulphur*, in Virginia; the *Indian Springs*, in Georgia; *Bladon*, in Alabama; *Lauderdale*, in Mississippi, and many others.

IV. **Common Salt, or Chloride of Sodium Waters** (*Halopegæ*). —The predominant element in these waters is chloride of sodium; besides, there are other chlorides, and in inferior quantities the sulphates of soda, potassa, lime, and magnesia, and the protoxide of iron; some are distinguished by considerable amounts of the iodides and bromides of sodium and magnesium. While many of the cold springs are impregnated with a large amount of carbonic-acid gas, nitrogen and occasionally sulphuretted hydrogen are found in those of higher temperatures. The physiological action of the saline waters is very marked; they augment and improve the secretion of the mucous membranes, promote diuresis and the peristaltic motion of the intestines, and stimulate the glandular and lymphatic systems to greater activity. As internal and external remedies, they are chiefly indicated in scrofulosis, chronic catarrhs of the alimentary canal, arthritis, rheumatism, blennorrhœa of the urogenital sphere; scrofulous, syphilitic, and arthritic residua in the urinary organs; enlargement of the prostate, lithiasis, etc.; in chronic affections of the skin, and in hysteria, hypochondriasis, or other nervous disorders connected with and dependent on disturbed abdominal venous circulation.

1. *Simple salt-waters* contain, besides chloride of sodium and gaseous elements, alkalies, earths, and iron, in large proportions, and, according as the one or the other of these chemical groups predominates, modifying the effect of the principal constituent, they are called *alkaline*, *earthy*, and *chalybeate salines*. All prove highly efficacious in scrofulosis and the various disorders dependent on a general scrofulous diathesis, in affections of the mucous membranes of the respiratory and digestive apparatus, in diseases of the liver and spleen, in rheumatism,

and arthritis, hæmorrhoids, biliary and renal calculi, diabetes, chronic metritis, etc.

The leading *cold* springs of this class are *Kissingen*, *Homburg*, Canstatt, etc., in Germany; *Cheltenham* and *Leamington*, in England; *Ballston Spa* (Sans-Souci), *Saratoga* (Congress, Union, Pavilion), in New York.

The leading *warm* and *hot* springs are, *Wiesbaden*, *Baden-Baden*, *Soden*, etc., in Germany; Lamotte, Bourbonne-les-Bains, and Bourbon-Lancy, in France; and Montecatini, in Italy.

2. *Concentrated salt-waters* (brine-springs, "Soolen") are characterized by containing an excess of chloride of sodium, and are thus made to furnish a large supply of common salt, which is produced by evaporation. In consequence of this process, other important remedial agents are gained, matters remaining in the residual liquid, the so-called mother-waters, in which the earthy chlorinated metals, iodine and bromine, and their unions, predominate, and which are either added to brine-baths to increase their effect, or are locally applied in the form of compresses and douches to intumesced lymphatic glands, struma, and indolent osseous affections. The springs of this class are principally employed in baths and other external methods—the very mildest only being fit for internal use—and prove of the highest service in all forms of scrofulous disease, in chronic metritis, in obstinate affections of the skin, in rheumatism and atonic gout, and in peripheric palsies.

Most prominent are the thermal brines of *Nauheim* and *Oeynhausen*, in Germany, and the cold brines of *Ischl Reichenhall*, Salzungen, Kösen, Hall, Arnstadt, etc., in Germany; Salins, in France; Sales, in Italy, etc. There are many brine-springs in the United States, chiefly in New York (Salina, Montezuma, Galen), Pennsylvania, Ohio, Kentucky, Virginia, Michigan, Illinois, and Missouri.

3. *Iodo-bromated-brine waters* are such as contain, besides chloride of sodium, the iodides and bromides of sodium and magnesium in an appreciable quantity. They are powerful curative agents, and chiefly indicated in scrofulous affections of the glands, skin, and bones, and in chronic inflammation of the uterus and ovaries. Their use is external—baths, steam, douche, injections—and internal.

To this class belong *Kreuznach*—very famous, and used both for drinking and bathing, the mother-water of Kreuznach also being used all over Europe—Ehmen, Dürckheim, *Krankenheil*, *Adelheidsquelle* (used much internally, even by children), Hall, etc., in Germany; Wildegg and Saxon, in Switzerland; Lippik, in Hungary; Montecatini, in Italy; and Staraja-Rossa, in Russia.

Of *alkalo-saline* springs, containing a large proportion of iodine, and especially useful in bronchial catarrh, gastric and intestinal disorders, gout, lithiasis, and skin-diseases, dependent on or connected with a scrofulous diathesis, we may mention as noted examples, *Luhatschowitz*, in Germany; *Ischia*, in Italy; and *Saratoga* (iodine spring), in New York.

4. *Sea-water* is among the most dense and powerful of all mineral waters of the saline class. The amount of salt in it depends, like its perceivable physical qualities, on various external influences, and the different seas differ in composition, according to the amount of evaporation. Thus the Atlantic Ocean contains from 240 to 290 grains of salts to the pint; the Mediterranean from 260 to 335, the Adriatic from 175 to 210, the German Sea 240, the British Channel 280, the Baltic from 32 to 154, and the Black Sea 40. In the annual mean temperature these seas vary as follows: the Atlantic, from 12 to 8° R.; the Mediterranean, from 16 to 12° R.; the Adriatic, from 12 to 10° R.; the German Ocean, from 8 to 4° R.; and the Baltic, from 6.9 to 4° R.

The chief ingredients are, chloride of sodium, magnesium and potassium, the sulphates of magnesia and lime, besides bromine in slight amount, traces of iodine and other salts and metals, together with organic matter in minute proportions. Sea-water is but rarely employed internally; so much the oftener, however, externally, in baths, douches, and injections, cold and warm. The most favorable time for sea-baths, at least in temperate climes, is from the middle of July until the end of September, when air and water exhibit higher degrees of temperature. Their therapeutic effect depends on the chemical composition, the temperature, and wave-motion of the sea-water—the latter operating like a powerful artificial douche—and, further, on the nature of the surrounding atmos-

phere. They stimulate the cutaneous system, promote resorption, improve the blood, tranquillize the excited nervous system, promote and improve assimilation and all vital functions, and act thus as tonics, stimulants, alteratives, and resolvents. But to dwell here at length on the physiologic and general therapeutic effects of sea-baths would be transgressing the scope of this paper; and we will therefore merely enumerate the various diseases in which these powerful saline remedials, assisted by the highly-oxygenized salt-air prevailing on seashores, have proved of signal benefit: 1. Diseases of the nervous system, hypochondriasis, hysteria, chorea, neuralgias, peripheric palsies, hyperæsthesia, etc. 2. Scrofulous, rachitic, gouty, and rheumatic diatheses. 3. Anæmia and chlorosis. 4. Female diseases, uterine disorders, anomalies of menstruation, fluor albus, pruritus vaginæ. 5. Affections of the male sexual organs, impotence, spermatorrhœa, chronic orchitis, varicocele. 6. Chronic hypertrophy of the spleen and chronic catarrh of the digestive organs. They are further employed as tonics and restoratives in protracted convalescence, and in the after-treatment consequent upon debilitating internal mineral-water cures. Very irritable and decrepit patients must be confined to the use of sea-air or lukewarm sea-baths only; while pregnancy, plethora, hæmoptysis, organic disease of the heart, aneurisms, excessive erethism of the nerves, and febrile conditions, contraindicate their use altogether.

V. **Bitter-Salt Waters — Bitter Waters** (*Picropegæ*).—The leading and characteristic constituents are sulphate of magnesia and sulphate of soda; besides these, they contain muriated and carbonated alkalies and earths, traces of iron and manganese, and slight amounts of gases. They are invariably cold, and used only internally. Their effect is cathartic, debilitating, antiphlogistic, and a protracted use leads to serious gastric disturbances, total loss of the digestive power, and even to hydropsical conditions. They are only suitable for robust, plethoric individuals, either in large, single doses, to effect copious evacuations, or in small doses, taken at intervals, to counteract abdominal venous stagnation. Chief indications are congestions to the head and chest, hyperæmia of the liver, suppressed menses, and hæmorrhoidal flow and chronic exanthemata connected with intestinal torpor.

To this class belong *Püllna*, *Saidschütz*, and *Sedlitz*, in Germany; Gran, *Ivanda*, and Ofen, in Hungary; Birmenstorf, in Switzerland; Cherry Rock and *Epsom*, in England; and Aranjuez, in Spain.

Milder and less debilitating in effect, and therefore far more preferable for use in the morbid conditions above named, whenever great weakness or catarrhs of the alimentary canal are present, are those bitter waters which contain in large proportions chloride of sodium. They are also indicated in cases where the just-mentioned affections are associated with torpid scrofulosis, and may be taken for weeks and months—a wineglassful morning and evening—without doing any injury, as the one-sided and noxious effects of the one class of salts are modified by the presence of the other. The noted waters of this kind are *Friedrichshall* and *Kissingen* (Bitter Wasser) in Germany, and Alap in Hungary—the first one, especially, being used and valued throughout Europe.

VI. **Glauber-Salt Waters.**—These waters are characterized by containing, besides the predominating sulphate, the carbonate of soda in considerable amount, and in smaller proportions the carbonates of lime and magnesia, chloride of sodium, and other earthy and metallic salts. They are either alkaline or earthy according as the one or the other of these secondary constituents predominates; the former, however, being by far the most numerous and important. The cold Glauber-salt waters are usually well charged with carbonic acid, which renders them even more efficacious; but so are also some of the thermal, the Schlossbrunnen, at Karlsbad, containing over twenty cubic inches in sixteen ounces. They do not only effect important changes in the blood, in consequence of their alkaline and earthy contents, but they exert also a salutary influence upon the organism by stimulating the activity of the alimentary canal. Operating as aperients, diuretics, diaphoretics, antilithics, and resolvents, they are indicated in chronic hepatitis, cirrhosis, fatty liver, amylaceous degeneration, at least during the first stages of the last-named disorders; in gout and lithiasis; in all severe disturbances of abdominal venous circulation produced by habitual constipation, high living, sedentary habits, etc.; in the various affections resulting from

these circulatory derangements, hyperæmia of the liver, uterus, and of the ovaries; hæmorrhoids, congestions to the brain and lungs, and psychical disturbances, like hypochondriasis and hysteria; in diabetes, and chronic affections of the bladder and prostate.

The thermal Glauber-salt waters are *Karlsbad*—very powerful and renowned, and from which is prepared by evaporation the Karlsbad salt, a popular purgative, either taken alone or added to other mineral waters—and Bertrich in Germany, and Neris and St. Gervais in France. Of the cold springs are best known *Marienbad*, *Salzbrunn*, Rohitsch, and the *Salzquelle* of *Franzensbad*, in Germany, etc.; *Tarasp* in Switzerland, and Malvern and Victoria in England.

VII. **Earthy or Calcareous Waters.**—This class contains, as predominating ingredients, calcareous salts, carbonate and sulphate of lime and chloride of calcium, besides other carbonates and sulphates, iron, carbonic acid, and sometimes also nitrogen and sulphuretted hydrogen. They are almost all thermal, and chiefly used in baths, douches, lotions, vapors, etc.; but the milder ones are also employed internally, with much benefit—being by no means indigestible and offensive to the stomach, as experience and chemical facts sufficiently prove[1]—by introducing into the body, in easily-assimilated forms, the elements requisite for its invigoration.

The waters of this class, which are divided into earthy-alkaline and gypsum springs, according as the carbonate of lime and neutral salts, or the sulphate of lime, predominates, and to which might properly be added those sulphurous spas that are strongly impregnated with gypsum, operate as diuretics, diaphoretics, astringents, antacids, stimulants, tonics, and are indicated in arthritis, skin-diseases, in disorders of the

[1] The prejudice that sulphate of lime is indigestible, etc., is wholly unfounded. The excellence and digestibility of such waters as Pyrmont, Driburg, Rippoldsau, and Bath—the latter highly praised by Heberden in digestive disturbances connected with gout—all of which contain very large proportions of sulphate and carbonate of lime, and the fact that the sulphates are transformed in the stomach into sulphurets, and the sulphuret of lime is easily soluble in consequence of the union of any free acid—carbonic, lactic, muriatic—with the base, prove the correctness of the above assertion.

digestive organs, scrofulosis and tuberculosis, lithiasis, and other affections connected with or dependent on those just named.

Of cold earthy springs, the alkaline at *Wildungen*, Germany, deserve especial mention; chiefly used and greatly famed in vesical catarrh and renal calculi, not only promoting the elimination of gravel and renal concretions, but, by the tonic action on the mucous membrane of the urinary passages, tending to prevent the formation of fresh depositions; and the chalybeate of *Contrexéville* in France, and *Recoaro* in Italy. There are numerous springs in the United States whose leading contents are calcareous salts, but they differ somewhat in composition from each other; foremost among them are *Gettysburg*, in Pennsylvania, otherwise remarkable for its large proportion of lithia, in which it is only surpassed by the Murquelle of Baden-Baden, *Sharon* in New York, and *Church Hill* in Virginia.

Celebrated earthy thermals are *Bath*, in England (arthritis and gastric disorders); *Lippspringe*, in Germany (incipient tuberculosis, etc.); *Leuk* (gout, skin-diseases, atonic ulcers) and Weissenburg, in Switzerland; Aix (Provence) and *Ussat*, in France; *Lucca* and Pisa, in Italy; *Washitaw hot-springs* in Arkansas. The limestone springs of Pike's Peak (Colorado), and the hot-springs of Utah, with many others, belong most probably to this class.

VIII. **Indifferent Thermal Waters** (*Acratothermæ*). —These waters resemble, in their character and amount of their contents, the *aqua communis* or rather *pluvialis*, and differ from it only in temperature. Their physical properties are just as negative; they are perfectly limpid, tasteless, and inodorous. What is it, then, that produces the wonderful influence they are known to exercise upon the organism? Is it their mineral constitution, or their impregnation with gases? By no means. The solid ingredients exceed scarcely ever a few grains in the pound, and the gaseous contents are equally scanty, nitrogen alone being found in comparatively larger quantity. Their effect can only be ascribed to high temperature; and here, again, the alleged superiority of natural heat over artificial becomes a verity. Something may also be due

to other agents still unknown. The indifferent thermals, by promoting secretions and excretions, improve assimilation, they calm the vascular and nervous systems, soften and relax the tissues, and vitalize the organism. Operating as diaphoretics, diuretics, resolvents, sedatives, and tonics, experience has proved them to be highly efficacious in morbid irritability (erethism) of the nervous system, in neuralgias and hypercineses, in chronic rheumatism and atonic gout, especially of delicate, exhausted, and nervous individuals, in palsies dependent on contractions, tumors and nodosities, in diseases of the skin, bones, and joints, and in convalescence. They are unsuitable in strongly-marked diatheses, for the removal or improvement of which the more heroic alkaline and saline thermals, acting powerfully upon the kidneys and bowels, are required, and contraindicated in hæmoptysis, in conditions predisposing to apoplexy, and in febrile diseases. The principal indifferent thermals are Buxton and Clifton, in England; *Pfäfers* and *Ragaz*, in Switzerland; *Gastein*, *Wildbad*, *Teplitz*, *Schlangenbad*, *Landeck*, *Warmbrunn*, Römerbad, Liebenzell, etc., in Germany; *Plombières*, Dax, and Bains, in France; Alhama, in Spain; Masino and San Martino, in Italy; the Lebanon Springs, in New York; the "*Warm*" and "*Hot*" Springs, in Bath Co., Virginia; the "*Warm*" Springs, in North Carolina, and many others in the United States that enjoy a high reputation, and are successfully employed in various diseases, yet exhibit upon analysis a poor mineral and gaseous impregnation.

Mineral Mud-Baths.—Before concluding this paper, it may be proper to refer in a few words to the so-called "moor" or mud baths that have recently come into use and form already a leading feature in many European watering-places. The mineral mud of which they are prepared is very rich in active substances, chiefly containing the salts of iron, soda, lime, and alumina, sulphuric, ulmic, and formic acids, and many vegetable matters of a gummy and resinous character. They are applied either to the whole body or in the form of fomentations to single parts—the liver, spleen, joints, etc.—and can be used at a much higher temperature than the common water-bath, mud being a bad conductor of heat. The physiological

and therapeutic effects of mud-baths are very marked and powerful; they act, principally by their volatile acids, their solid contents, and high temperature, as unrivalled excitants, stimulating the skin, animating and vitalizing the nervous system, augmenting secretions and excretions, promoting resorption, and improving the tone of the organism. The pulse is accelerated, the bodily heat rises, diuresis is increased, profuse, protracted, peculiarly sour perspirations ensue, and under these effects, by which the most torpid system even is made to react against disease, an alteration in the character of the fluids takes place, and a speedy removal from the organism of the effete constituents of the blood and juices, and with them of many morbific elements. Infiltrations, exudations and all kinds of morbid pseudoplasms not produced by incurable diatheses, that have resisted the curative power of the strongest alkaline, saline, and sulphurous thermals, are thus softened and resolved under the influence of the mineralized hot mud-baths. But, besides being resolvent and catalytic remedials of the highest order, they operate also as leading alteratives, stimulants, and tonics, either directly by the ingestion of their active principles—iron, volatile organic acids—into the blood and tissues through the medium of the cutaneous surface, or indirectly by the effect of their numerous solid and gaseous contents upon the peripheric nerves—reflective action—and secondarily upon the whole system. They are indicated in torpid scrofulosis, anæmia, and chlorosis, in old rheumatic and gouty affections with morbid residua in the muscles, bones, and joints, contractions, tumors, lumbago, sciatica, peripheric palsies, in chronic hyperæmia and hypertrophy of the liver and spleen, in affections of the male and female sexual organs, impotence, spermatorrhœa, sterility, leucorrhœa, in some diseases of the skin, impetigo, chronic urticaria, atonic ulcers, in tubercles of the bone, in old injuries, anchyloses, etc.

The most important and celebrated mineral mud-baths are at *Franzensbad*, Elster, Muskau, Altwasser, etc. (chalybeate); at Karlsbad, Teplitz, Marienbad, etc. (earthy-bituminous, sulphurous, chalybeate); and besides these two classes which are especially designated as "moor-baths," the sulphur mud-baths at Baden, by Vienna, Eilsen, Nenndorf, Meinberg, Wipfeld,

Abano, Acqui, St. Amand, etc., and the saline mud-baths at Kissingen, Ischl, Reichenhall, Elmen, etc.

Although greatly differing in composition and the character of the predominating elements, yet some of their leading properties and effects are common to all. They all contain more or less iron, sulphur, magnesia, lime, alumina, soda, potassa, etc.; they are strongly impregnated with mineral and volatile organic acids, are closely united with numerous vegetable substances, and are all alike powerful excitants and resolvents, while many operate also as highly-efficient tonics.

Clinical Records from Private Practice.

I.—*Case of Recto-Urethral Fistula.* By J. C. Nott, M. D., New York.

The subject of this case, W. J. T——, Esq., a gentleman of high respectability, from Kentucky, came to New York the latter part of May, 1870, accompanied by Dr. A. S. Frederick, the family physician of his father, and placed himself under my charge for treatment. The following is the history of the case:

Age thirty-two, tall, spare built, but rather muscular. Had enjoyed good average health until the spring of 1864, when he had a severe attack of typhoid fever, followed by symptoms of stone in the bladder. He continued to suffer from these symptoms for four years, during which time his health became much impaired. On the 1st of December, 1868, a large stone, of irregular shape, weighing five ounces, was removed by the lateral operation, which left a fistulous opening in the rectum, through which the urine passed. I have no note of the case from his surgeon, but, from the size and shape of the stone, the case was unquestionably a bad one, and I presume this accident was unavoidable. A portion of the urine continued to discharge by the rectum up to the time of his arrival in New York, and no attempt had been made to close the opening. Not only did a portion of the urine pass through the rectum, but fecal matter and gas frequently escaped with the urine through the urethra. The fæces sometimes formed an annoy-

ing temporary obstruction to the passage of urine through the penis. The bladder was irritable, requiring the urine to be passed off more frequently than natural. The rectum was also irritable, but less so than is usual in urinary fistulæ opening into it. His general health was delicate, but on the whole pretty good.

Condition when examined.—On introducing my index-finger into the anus and curving it forward toward the urethra, I discovered a fistulous opening, immediately behind the sphincter ani—the opening being just large enough to admit the end of the finger; it was olive-shaped, edges smooth, well defined, of cicatricial hardness, and about the thickness of a piece of sheepskin. The prostate gland could be felt bounding the opening posteriorly, and it was evident that the opening extended the entire length of the membranous portion of the urethra, which occupies about an inch or a little less of the distance between the prostate and the bulb of the urethra.

The ulceration, together with the contraction of tissues, had removed the lower half of the urethral cylinder, reducing the original channel to a gutter, which was overlapped by the parietes of the rectum in which the opening was situated. I next introduced Sims's lever speculum into the rectum, which brought the parts well into view, and confirmed the diagnosis made by the touch. The opening, communicating between the rectum and urethra, was free from inflammation or ulceration, and presented a clean, smooth appearance, resembling a vesico-vaginal fistula of similar dimensions.

I introduced into the urethra a No. 10 silver sound, the point of which passed through the opening into the rectum, but the index-finger of the left hand in the rectum easily gave a proper direction to the point of the instrument, which then passed readily into the bladder. It was evident, from the large space in which the bougie moved at the injured part, as well as from the evidence given by the finger, that the urethra was dilated above and below the opening, and that a sort of pouch was formed by the lax tissues of the rectum supplying the lower wall of the urethra which had been removed. There was such an abundance of tissue to cover over the sound, as to

give fair promise of the success of an operation for closing the fistula.

I at once planned in my mind the operation which I thought suitable to the case, explained it fully to Dr. Frederick and the patient, and they consented immediately to make all the arrangements necessary for carrying it out at an early day.

I proposed to place the patient on a suitable table on his left side, in the semi-prone position recommended by Drs. Sims and Emmet, in the operation of vesico-vaginal fistula, to introduce a No. 10 elastic catheter into the bladder, both for the purpose of facilitating the paring of the edges of the opening and the insertion of the sutures, and at the same time to serve as a guide to direct us in the degree of traction which could be exerted by the sutures, without danger of narrowing too much the channel of the urethra. It was evident that, without some guard of this kind, there was danger of passing the needle through tissues which should not be included; and, without some cylinder to bridge over, it would be impossible to say what outlet would be left for the urine after the completion of the operation.

I proposed, in addition, to divide freely the sphincter-ani muscle in the direction of the perineal raphe. There were two important reasons for dividing the sphincter: 1. The fistulous opening being in a deep pit, immediately behind the sphincter, it would have been, to say the least, very difficult, if not impossible, to pare the opening thoroughly and apply the sutures, until this barrier was removed. 2. It was important to paralyze the sphincter muscle for a time, to prevent the pain, irritation, and motion, which its involuntary and spasmodic contractions would cause. The contractions of the sphincter, moreover, might draw upon the tissues included by the sutures, and thus interfere with primary adhesion. Still another important reason for dividing the sphincter was this: While it was determined to constipate the bowels by opiates, if possible, until the sutures should be removed, the bowels might act in spite of our efforts to prevent it—in this case, the divided sphincter would offer little resistance to the fecal discharge—less contractile effort would be required of the rectum to expel fæces, and the danger of tearing out the stitches would thus be greatly diminished.

This affection had been a cause of much physical and mental suffering to Mr. T.; the case presented points of novelty, as well as difficulty, and altogether was one which excited in me much sympathy and interest. I determined that he should have the best chance for recovery that I could possibly give him. Although I had had some satisfactory experience in vesical and vaginal operations, it occurred to me that more than usual difficulty might present in passing the sutures in this case; and, being familiar with the large experience and remarkable dexterity of my friend Dr. Thomas A. Emmet in operations for vesico-vaginal fistula, elytrorrhaphy, etc., I determined to ask his assistance in the most important part of the operation. I accordingly called on Dr. Emmet, explained the nature of the case, the operation proposed, and requested that he would do me the favor to close the opening for me. He readily consented, and an early day was appointed for the operation.

Dr. Emmet met me on the 28th of May at the room of the patient, and the operation was performed in the presence of Drs. Frederick, B. F. Dudley, Wm. R. Whitehead, and Wm. H. Johnston.

A gum-elastic catheter was passed into the bladder, the patient placed in left semi-prone position on a table, and brought fully under the influence of ether. I then introduced Sims's vaginal speculum into the rectum so as to expose fully the fistulous opening and enable me to see the exact extent of the incision I proposed to make. I then, with a bistoury, made a free incision entirely through the sphincter muscles of the anus down through the tissues enveloping the bulb of the urethra, and extending the incision a little deeper on one side to avoid the hæmorrhage which might follow an incision into the bulb. It was evident, however, as the incision progressed, that the bulb was pretty much destroyed by the previous disease, and that we had little to fear from bleeding—one artery which passed to the bulb from the right, and at the bottom of the incision, required ligature and none other. This incision brought the opening well in view. I then handed the case over to Dr. Emmet, to finish the operation as he thought best. The doctor removed Sims's speculum and replaced it by his

own self-retaining modification of the same instrument, fixed it firmly in position, and thus secured a good and steady view of the parts to be operated on. He then proceeded precisely as he is accustomed to do in his operations for vesico-vaginal fistula. He pared the edges thoroughly with curved scissors, and, with his short needles and needle-holder, inserted nine silver sutures, which were properly adjusted, twisted, and cut off. From the depth of the pit in which he had to work, and the little oozing of blood into it as he went on, the paring and application of sutures were by no means free from difficulty, and one of less experience and dexterity than Dr. Emmet might have failed in bringing the operation to a successful issue. The opening, however, was promptly closed, and every thing seemed perfectly satisfactory.

After the doctor had trimmed off the hard cicatricial edges of the opening, and thus set free the tightened tissues, it became still more evident that a sort of pouch had been formed between the rectal opening and the remaining upper wall of the urethra. The opening, which was comparatively small before the hard edges were removed, presented an aperture so large as to require nine sutures to close it properly; it was also evident that the rectum, by the operation, was made to supply the deficient urethra.

The operation being completed, the patient was put to bed, and, after the effect of the ether had worn off, a dose of elixir of opium was administered to compose him and keep the bowels quiet. About an hour after the operation, the patient passed his water freely without pain or difficulty, and, with the urine, air, which had been enclosed in the bladder by the sutures, passed off; no air passed at any time subsequently.

The progress of the patient after this was remarkable. He had no fever, no pain, no disagreeable sensation in rectum or bladder, slept well without anodynes, had no inclination to stool, passed his water occasionally, took beef-tea, milk, and eggs with relish, and every thing went on smoothly until the eighth day, when he had a smart attack of colic, which was relieved by opium. On the 6th of June, the ninth day after the operation, and the one agreed upon for removal of the su-

tures, Dr. Emmet again met us, all the gentlemen of the previous occasion being present.

The patient was again placed on the table, in the same position as before, and Sims's speculum introduced. The sphincter ani was completely healed, the silver sutures were all firmly in place, and all looked well. The rectum contained no fæces, and, on removing the nine sutures, the closure of the opening was found to be perfect.

Two days after, the eleventh from the operation, half an ounce of Epsom salts and half a drachm of calcined magnesia were given in the morning before breakfast; when it began to move in the bowels, an enema of warm water was given, and he soon had several pretty free evacuations without pain or trouble. The functions of the rectum and bladder both seemed perfect, and the cure complete.

June 12th.—He has been walking out moderately for the last three days without complaint of any kind, and leaves for the country to-morrow in fine spirits, on the fifteenth day after the operation.

P. S.—I omitted to mention one little expedient of Dr. Emmet in the operation, which is too important to be overlooked. After the speculum was introduced, he passed up the rectum a piece of sponge about the size of an egg, with a string attached to facilitate its removal. The object of this was to close the rectum above and prevent the passage of fecal matter, which might interfere with the operation.

II.—*Obstructed Labor from Large Fibrous Tumors; Curious Effect of the Uterine Contractions in causing the Fœtus to ascend; Delivery by the Forceps; Recovery of both Mother and Child.* By A. F. Woodward, M. D., Brandon, Vt.

Mrs. M., aged thirty years, American, resident at Kensico, N. Y.; married in 1867; always in the enjoyment of tolerable health, notwithstanding for many years a morbid growth, or fibroid development, has been easily discernible within the walls of the abdomen. Being anxious about her first pregnancy, she came to Brandon, that she might be in the society of her sisters, and under my care.

April 2, 1870, 5 *o'clock* A. M.—I was requested to visit her, as her confinement was expected. I found her as cheerful and comfortable as the majority of women are in the first stage of labor; skin sallow; and the face, especially about the eyelids, slightly swollen. The pains, which occurred at intervals of from five to eight minutes, were not very strong, and yet there was a peculiar cutting and intense distressing pain, midway between the umbilicus and the pubes. The os, which looked toward the sacrum, first admitted the end of my index-finger, with which I drew the cervix forward toward the pubes. From the anterior wall of the uterus two fibroid tumors projected; the lower and smaller one, about the size of a billiard-ball, held to the womb by a sessile attachment, just above and to the right of the pubes. The larger one, the size of a large tea-plate, was attached over agre at extent of the anterior wall, between a point a little above the umbilicus, and extending within two inches of the pubes, not readily detected as a morbid growth upon a gravid womb by any ordinary examination of the abdomen, usually instituted at the time of labor; the mass being so broad and flattened it could have been easily mistaken for the walls of the womb, especially if the density escaped attention. As the pains were lacking only in strength, as far as I could judge, and the patient in good condition, I left the house, to return at 9 o'clock A. M. The os had gained a size equal to a silver dollar, the pains were stronger and more frequent, and membranes intact. 11 o'clock A. M.—Pains have increased in strength, but not in frequency; dilatation so nearly completed, I found no trouble in pushing the os over the head, which lay at the inferior strait, showing no signs of engaging. 12 o'clock, M.—Pains no stronger, but more frequent, and four teaspoonfuls of tincture of ergot have been given in the last hour. The patient cannot be induced to bear down, in consequence of tenderness, which has made its appearance in the region of the cutting pain before alluded to. The head rides the superior strait, changing its position from time to time. 2 o'clock P. M.—Strength of patient and pains much the same; the head still refuses to descend; indeed, I am satisfied that the head, instead of advancing, recedes with each contraction. Feeling confident that the womb, unaided, could not be made

to empty itself, and that further delay would be attended only by evils usually resulting from unnecessary delay, I applied Hodges's long forceps laterally to the pelvis of the mother and to the sides of the fœtal head, the occiput being directed to the sacrum. Ether was administered by my friend Dr. C. W. Peck. Traction was now used in the usual way for a half hour, without in the slightest degree causing the head to descend, even when the instruments were rotated so as to bring the long diameter of the fœtal head into apposition with the oblique diameter of the superior strait; the forceps were now withdrawn, the hand wholly introduced, and carried up through the superior strait, to discover, if possible, the cause of failure. Nothing whatever was found to account for it. After this exploration was made and no cause discovered, upon reflection it for the first time occurred to me that, possibly, the uterine contractions were antagonistic, inasmuch as they unmistakably caused the child to recede instead of advancing, and were opposing a force just strong enough to baffle me. Acting upon this view of the case, the forceps having been again adjusted, traction was kept up, without once relaxing the effort, for fifteen minutes, when the head descended well into the excavation. Withdrawing the forceps to ascertain, by another readjustment, that they were properly applied, we were much astonished to find, upon the first uterine contraction, that the head was ascending out of the pelvis to a position again at the superior strait. The forceps were again applied, this time as before, laterally to the pelvis, but to the forehead and occiput of the child, the head now lying transversely. This time the head was brought down upon the perinæum so far as to keep its place till the forceps could be removed and reapplied laterally to the fœtal head, when extraction was very soon effected. The shoulders causing considerably delay, it was after a painful struggle that the child was resuscitated. There was a broad welt over one frontal protuberance, the only mark which the fœtus sustained from the forceps. That I might the more fully confirm my opinion of the tumors, I passed my hand into the womb for the placenta, which I pushed out, and then, with one hand on the abdomen and the other within the womb, arrived at the diagnosis as stated above.

Two teaspoonfuls of tincture of ergot were given to insure good contraction. Two hours later I was sent for, because the patient had fainted. I found the womb filled with coagula, which I at once removed, and then introduced a little ice, and upon the abdomen applied alternately ice-water and hot water. Two more teaspoonfuls of tincture of ergot were administered, and the womb firmly contracted, and was good enough ever after to remain so. The child weighed ten pounds. The mother recovered rapidly.

I am of opinion that, owing to the peculiar attachment of the tumors, their size, or the place of attachment, or all of these things combined, the womb, in contracting, so grasped the child, in a sort of hour-glass constriction, as it were, as to raise the child. And further, that this state of things would have continued until the woman became exhausted, without in the least advancing the head; and that, had I persisted in applying force with the forceps only at the time of uterine contractions, I might have continued doing so, if the cervix had not mercifully separated, until the second dentition, without accomplishing my purpose.

III.—*Cases illustrating the Use of Morphia hypodermically.* By L. F. Babcock, M. D., Omaha, Nebraska.

Case I.—*February* 14, 1869. Was called to Mr. H. (colored); found him suffering with facial neuralgia, involving left side of head and face. I used subcutaneous injection, solution sulph. morphiæ ¼ gr. in arm, and in fifteen minutes pain was relieved.

15*th*.—8 A. M. Called at my office, reported no pain since previous morning until 7 A. M. Repeated the injection, ¼ gr., and the pain ceased in a few moments.

16*th*.—9 A. M. Reports no pain since yesterday until about 8 o'clock this morning. Repeated the injection, ¼ gr.

July 30*th*.—Had had no further attack up to this date.

Case II.—*June* 2*d*, 6 P. M. Was called to Mr. L., aged sixty-five; found him suffering with acute articular rheumatism in right knee. Pulse 120, considerable fever, and much prostrated from loss of sleep. Had been under treatment by Dr. A. the past eight days, but without relief, for, as he expressed it, "I have been having excruciating pain ever since I was

taken." I used solut. morphiæ acetatis ⅛ gr. subcutaneous injection below the knee, and left him for the night.

3d.—7 A. M. Passed a very comfortable night, but pain now increasing; pulse 90. Repeated injection, ⅛ gr.

6 P. M.—Had considerable pain during the day. Repeated the injection, ⅛ gr.

4th.—7 A. M. Slept the most of the night; pains coming on again, repeated the injection, ⅛ gr., and gave hydrarg. sub. mur. gr. viij, pulv. rhei gr. v.

6 P. M.—Has been easy through the day; one evacuation of the bowels.

5th.—7 A. M. Has slept well; pain now increasing, used injection morph. acetatis ¼ gr.

6 P. M.—Considerable pain. Repeated injection, ¼ gr.

6th.—7 A. M. Has slept well, pain and swelling less. Repeated injection, ¼ gr.

6 P. M.—No pain through the day. Repeated injection, ¼ gr.

7th.—A. M. Improving. Used injection, ⅕ gr.

6 P. M.—Repeated injection, ⅕ gr.

8th.—7 A. M. Very comfortable. No injection.

6 P. M. Used injection, ⅕ gr.

9th.—7 A. M. Improving fast; no pain. Ordered stimulating liniment, and left him convalescent.

CASE III.—*July 16th*, 7 P. M. Was called to Mrs. K.; found her suffering hard-labor pains, first pregnancy, five and a half months advanced, labor induced by overwork. Used subcutaneous injection solut. morph. sulph. ¼ gr. in left leg; slight pains occurred ten minutes after using injection.

17th.—9 A. M. Rested well during the night; had slight pains in back.

6 P. M.—Pains increasing. Repeated injection, ¼ gr.

18th.—9 A. M. Pains entirely subsided.

Patient remained in good health, and was confined at full term.

IV.—*A Case of Twin Conception. One Ovum blighted at Three Months, and both carried to Full Term.* By GEORGE G. HOPKINS, M. D., Brooklyn, N. Y.

ON the 15th December, 1867, I was called to see a Mrs. M., about thirty-four years of age, who was then in the latter part

of the ninth month of pregnancy. She was complaining of severe pain in her side, and other symptoms of pleurisy. Physical examination revealed a large amount of effusion in the right pleural cavity. The fluid was readily removed by the usual remedies. But she imagined there would be some unnatural kind of labor. On the 24th I was again called, and, though it was not more than twenty minutes from the time her husband left his house until my arrival, I found the child born, and the placenta partly detached—the patient having been delivered on the floor. As the woman did not appear to be losing much blood, and the child was in a critical position, I turned my attention to the child, which, after much difficulty, was made to breathe. Then, on placing my hand on the mother's abdomen, I found the uterus very much distended. A vaginal examination revealed the placenta detached, which was readily removed. I then introduced my hand into the uterus, and was able to turn my hand about in the cavity, with the fingers fully extended, without inducing any contraction. In so doing, my hand came in contact with an apparently solid, unattached mass about the size of a hen's-egg. This mass I removed, supposing it to be a large clot, but, its appearance being peculiar and more consistent, I reserved it for a thorough examination. The irritation of my hand producing no contraction, I resorted to the cold-water douche, but without effect. The case having now become desperate, I called for some vinegar, and, having saturated a piece of cloth with it, introduced the cloth into the uterus, and squeezed the contents out. The uterus slowly contracted, and expelled my hand, and the hæmorrhage ceased immediately. The patient recovered without any unpleasant symptoms.

The mass found in the uterus was of a yellowish-white color. On section, it was found to contain a turbid fluid, and presented the appearance of a degenerated ovum of about three months, with the membranes thickened. The microscope revealed distinctly the villi of the chorion.

The history of the case showed that this was her fourth pregnancy. At her second confinement she was delivered of twins. When she was about three months advanced in this

pregnancy she fell in the street, striking her left side against a stone; slight hæmorrhage followed, with pain in the side for weeks. Since then she had gone on as usual.

This case might be thought by some to be one of superfœtation, but the whole history disproves any such supposition. And, if many of the so-called cases of superfœtation were more fully studied, I doubt not but that they would be found to be cases of twin conception, in which the development of one ovum has been arrested, while the other has gone on naturally to full term.

V.—*Fracture of the Anterior-superior Spinous Process of the Ilium from Muscular Action.* Reported by S. Joy, M. D., and J. Wallace McWhinnie, M. D., Tillsonburg, Ontario, Canada.

In looking up the literature of fractures of the anterior-superior spinous process of the ilium, we read of their occurrence from direct violence, but not one case is recorded as having taken place from muscular action. Having had just such a case to treat, we have thought it of sufficient interest to report. The patient, Augustus S., aged seventeen, a medical student, was engaged in a foot-race, where a certain distance had to be run, then to turn and run back. In the exertion of turning, he felt something snap in his right hip, walked a few steps, and fell. On examination, distinct motion and crepitus could be felt, by pressure over the process, also by placing the thumb over the origin of the sartorius and rotating the thigh. The fracture extended into the notch below, but there was no great tendency to displacement, save when the leg was abducted, thus placing the sartorius upon the stretch, the process, doubtless, being partially kept in place by the fibres of the tensor vaginæ femoris, arising from this process on the one hand, and Poupart's ligament on the other, when tension was taken off the sartorius. The patient was placed in bed with the thighs flexed and the shoulders raised, a bandage being applied to aid in steadying the fracture. It may be as well to state that this position and adduction of the right leg were maintained by bands attached to the posts of the bed. In two weeks the patient made a good recovery without displacement.

Although the patient was a very muscular young man, yet it is difficult to believe that the sartorius is sufficiently powerful to fracture its point of origin; but the case was examined most carefully both by Dr. McWhinnie and myself, and there was no room for doubt about the diagnosis.

VI.—*Hæmoptysis; Death; Autopsy.* By GEORGE P. SALMON, M. D., of New Lebanon, New York.[1]

June 19th.—I was called to see H. E. D., a man of French birth, by profession a chemist. I found him slightly indisposed, and prescribed for him a mild cathartic, and the bromide of potassium, to produce sleep.

On the following morning I was summoned to his house in great haste. I found him pulseless, and in a complete collapse from a profuse hæmorrhage which had occurred very suddenly. He had lost from six to eight ounces of blood by his mouth. By the free administration of brandy and other diffusible stimulants, combined with friction, and the application of dry warmth externally, after the lapse of three hours, reaction was established.

At 3 o'clock P. M. he had an evacuation from his bowels of more than a quart of dark, dead blood. At 10 o'clock P. M. the hæmorrhage returned, differing but little in character, quantity, and effect, from the preceding one. In a very few moments he expired.

Autopsy—sixteen hours after death. Body was well proportioned. There was a large development of adipose tissue. The stomach contained about two quarts of dark, coagulated blood, which he had swallowed. There was no abrasion of its coats, or rupture of its vessels.

Its mucous membrane appeared somewhat softened. The other abdominal organs were healthy. Heart normal. The pericardium contained one ounce and a half of liquid pus. Its lining membrane was softened. There were no adhesions of the pleuræ. Right lung and superior lobe of left were natural in color and consistence. Neither lung presented any indication of tubercle or pneumonia. The inferior lobe of

[1] Read before the Columbia County Medical Society, at its semi-annual meeting in June, 1869.

the left lung, near its root, for the space of several square inches around the pulmonary vessels, showed an infiltration of its tissue with fresh blood, indicating that peculiar pathological condition described by some authors as "apoplexy of the lungs," which does and must occur before death. This was the seat of the fatal hæmorrhage.

Whether the hæmorrhage occurred from one or many of the pulmonary vessels, it was impossible to determine; but, that it was produced by the giving way of the vascular coats, softened by degeneration of their tissue, there is not the least doubt. The cause of the pus found in the pericardium was the same degeneration of the tissue of its lining membrane. Taking the quantity of blood ejected from the mouth, with that passed from the bowels and that found in the stomach, he must have lost more than one gallon.

Remarks.—It is a fact well known to the profession, that hæmoptysis, independent of organic disease of the lungs, is very rare; indicating, as it usually does, the deposition of tubercle. We hardly expect to find any other local cause for this hæmorrhage. Authors tell us it may occur secondarily from some organic lesion of the heart; yet this is the exception, and not the rule, in cardiac disease. In this case the second hæmorrhage, recurring within twelve hours from the first one, proved fatal in an apparently healthy subject.

He was of full habit, a high liver, and possessed strong intellectual powers. For the past three years he had drunk freely of "absinthe," a very popular drink on the Continent, and also used to quite an extent in this country. *Artemisia absinthium* has long been used by the profession as a remedial agent in the treatment of various diseases. The alcoholic tincture is used in France and Switzerland, and also in some parts of Germany, as a stomachic stimulant, under the name of *absinthe sirop.* Within a few years, this drink has become very fashionable among the higher circles of the American people, and it may be found in many of the first-class hotels. Those who use it are mostly high livers, and, feeling the need of something to stimulate the stomach, they resort before meals to absinthe, either pure or diluted with water. I think it is regarded by the profession as a very po-

tent stimulant, and very likely to produce irritation, inflammation, and chronic softening of the mucous membrane of the stomach. Most certainly will it do so if taken when the organ is empty.

It is said that foreigners who habitually use the tincture undiluted often die suddenly, with indications of softening of the mucous tissues. Might not this drink, which the patient had taken for three years, almost as a beverage, have produced the softening of the mucous and vascular membranes, and caused the hæmorrhage which resulted in his sudden death?

Bibliographical and Literary Notes.

ART. I.—*Regimen Sanitatis Salernitanum. Code of Health of the School of Salernum, translated into English Verse, with an Introduction, Notes, and Appendix.* By JOHN ORDRONAUX, LL. B., M. D., Prof. of Medical Jurisprudence in the Law School of Columbia College, N. Y., etc. Philadelphia: J. B. Lippincott & Co., 1870. Royal 8vo, large paper copy, pp. 166.

WE regret exceedingly the compulsory delay in our notice of this book; and this all the more, because, in the reaction which is now taking place against the so-called "humanities" in education, the superficial observer may take side with the popular opinion, and look upon the book as a useless remnant of an almost valueless literature. The book, it is true, is a remnant of a past age, but it is dear to the heart of every true scholar, and by such is treasured not so much for its present intrinsic merits, as for the fact that it stands out an epitome almost of the medical knowledge of the day, and a connecting link, as it were, between ancient and modern medicine. As evidence of the high esteem in which the book has been held, we have only to state that more than one hundred and sixty separate editions[1] of the Code are known to have been published. "It

[1] Our first acquaintance with the book was so curious as to be worth mentioning. In reading Menière's "Études Médicales sur les Poëtes Latins," we came across the expression—*Semel in mense ebriari*—said (though erroneously) to be one of the maxims of the school of Salerno, and being

was for ages the medical bible of all Western Europe, and held undisputed sway over the teachings of its schools, next to the writings of Hippocrates and Galen. For centuries, the educated world, laymen as well as physicians, pondered over its broad truths, its quaint suggestions, its astute interpretations of physical phenomena, and its aphoristic sayings, as the hoarded wisdom of all preceding time. . . . Not to have been familiar with it from beginning to the end, not to have been able to quote it orally as the occasion might require, would, during the middle ages, have cast serious suspicion upon the professional culture of any physician."

The topics discussed are the important ones of air, food, exercise, sleep, excretions, and the passions, the six *non-naturals*, as they were called by the Galenic school; and it is not a little singular to observe how far the precepts on these subjects coincide with the more advanced knowledge of the present age. Many of the rules laid down in the code with all the authority pertaining to the great school from which they emanated—for Salernum, it will be remembered, was the acknowledged head and centre of medical learning, and the arbiter in medical ethics—could not be improved upon even now. And, although there is much that is crude, quaint, and erroneous, it is a matter of surprise that there is so much of sound sense and truth in the tenets of this school. Were this not so, the book could

at that time engaged in a study of the literature of delirium tremens, the advice to get gloriously drunk once a month sounded so strange and unorthodox in our ears that we concluded to hunt up the original, and see what it meant. To our dismay, there was not a copy to be found in any public library of this city at that time; and, after waiting more than a twelvemonth, we received from Europe a copy of the black-letter edition of 1619, as the only available copy to be had. Still later, we procured a copy of Sir Alexander Croke's (Oxford, 1830) edition—the best in some respects ever published. This edition has been long out of print, and there are probably not a dozen copies in this country. Shortly after this, (in 1861), an edition was published in Paris. The present edition, Ordronaux's, is the first published in the United States. At the time of our original search for the book, there were copies, as we subsequently learned, in several private libraries in this city; and we may mention, with propriety now, those of the late Drs. John Watson and John W. Francis. The completest collection of the book in this country is in the Library of the College of Physicians and Surgeons of Philadelphia.

hardly have retained the hold which we have seen it had for so long a time upon the medical profession.

The poem itself, which consisted originally of only three hundred and sixty-three lines, is written in Leonine verse,[1] which affords such numerous varieties, and which was a favorite style on account of its more sonorous ring than that of simple hexameter or pentameter. The poem has grown, however, by additions and commentaries, so that it now makes quite a respectable volume; but Dr. Ordronaux, with his usual close scholarship, has been careful to preserve the original text intact, and has indicated the sources from which the additions have been made. In his translation he has endeavored, as far as the inflexibility of the English language would permit, to make his renderings accurate, and, taken altogether, his success has been wonderful. Of course, it is easy to criticise such efforts, for there never was and never will be a translation of any magnitude which could be deemed faultless; but some allowance should be made in such matters for scholarly acquirements and refined instincts, and these qualities are splendidly displayed in this translation. To those flippant censors, who condemn a translation on the strength of the rendering of a couple of lines, we would hint that a further examination might discover some merit in the work; or, if insensible to this advice, we would recall to them Horace's famous lines, "Si quid novisti melius istis, candidus imperti; si non, his utere mecum." "Commend it or come and mend it. If thou canst not the latter, nor willest not the former, then keep silence."

As a sample both of the original poem, and as a standard of comparison for the translation, we append the opening lines, with two English versions from the editions now before us, and mentioned in a previous note. It is not, however, exclusively in the translation that the value of this edition lies. Dr. Ordronaux has enriched the volume with a lengthy introductory, giving an historical sketch of Salernum and its famous school; and with his well-known industry he has collated materials the very existence of which was only known to

[1] Our readers will recall some notable and charming instances of the use of this verse in "*Father Prout's Reliques*," "*Noctes Ambrosianæ*," etc.

the curious in such matters. Interested ourselves for many years in this subject, we can say that nowhere, in any thing like equal compass, is there to be found so much interesting material as Dr. Ordronaux has here gathered together:

Anglorum Regi scribit Schola tota Salerni.
Si vis incolumem, si vis te reddere sanum,
Curas tolle gravas, irasci crede profanum.
Parce mero—cœnato purùm, non sit tibi vanum
Surgere post epulas ; somne fuge meridianum ;
Ne mictum retine, nec comprime fortiter anum ;
Hæc bene si serves, tu longo tempore vives.

Si tibi deficiant medici, tibi fiant,
Hæc tria—mens læta—requies—mɔderata diæta.[1]

From the London translation, published in 1607, under the title of "The Englishman's Docter, or the Schoole of Salerne; or, Physicall Obseruations for the perfect Preseruing of the Body of Man in continuall Health."

The *Salerne Schoole* doth by these lines impart,
All health to *Englands king*, and doth aduise
From care his head to keepe, from wrath his harte.
Drinke not much wine, sup light, and soone arise,
When meat is gone, long sitting breedeth smart;
And after noone, still waking, keepe your eies;
When mou'd you find your selfe to *Nature's need*,
Forbeare them not, for that much danger breeds.

Vse three physitians still, first doctor *Quiet*,
Next doctor *Mery-man*, and doctor *Dyet*.

From the London edition of 1617, published with original text, and the commentaries of Villa Nova, translated under the title of "*Regimen* Sanitatis Salerni: or, the Schoole of Salernes Regiment of Health."

All *Salerne* Schoole thus write to *Englands* king
And for man's health these fit advises bring.
Shun busie cares, rash angers, which displease;

[1] Sir Alexander Croke includes these last two lines in the text, while Dr. Ordronaux refers them to the Commentary of Arnaldus de Villa Nova.

Light supping, little drinke, doe cause great ease.
Rise after meate, sleepe not at after-noone,
Vrine, and Natures need, expell them soone.
Long shalt thou live, if all these well be done.

When Phisicke needs, let these thy Doctors bee,
Good dyet, quiet thoughts, heart mirthful, free.

From the present (Dr. Ordronaux's) edition:

Salerno's school, in conclave high, unites
To counsel England's king and thus indites:
If thou to health and vigor wouldst attain,
Shun weighty cares—all anger deem profane,
From heavy suppers and much wine abstain.
Nor trivial count it, after pompous fare,
To rise from table and to take the air.
Shun idle, noonday slumber, nor delay
The urgent calls of Nature to obey.
These rules if thou wilt follow to the end,
Thy life to greater length thou mayst extend.

Shouldst doctors need, be these in doctors' stead—
Rest, cheerfulness, and table thinly spread.

We cannot close our notice of this medical classic without publicly expressing to the publishers our thanks for the liberality they have displayed in giving to this volume so sumptuous a dress. It was fitting that this choice morsel of mediæval medical literature, so dear to every true scholar, should be preserved in appropriate garb, and in this instance Mr. Lippincott has made that garb simply and severely faultless, and for this he deserves and will receive, we trust, the heartfelt congratulations—to say nothing of the more solid commercial recompense—of every classically-educated physician in the land, for every such should be proud to have this volume on his shelves.

ART. II.—*Eczema, its Nature and Treatment.* By TILBURY FOX, M. D. London: Henry Renshaw, 1870.

THIS little work comes to us to swell the list of dermatological monographs, and recommends itself by the clearness and simplicity (so well known in this author's style) with which the subject is treated. The book is a reprint, from the *Lancet*, of three lectures, being the Lettsomian Lectures for the session 1869–'70.

Of course, the author indulges at the start in the usual little tirade against the modern complications of nomenclature. Hebra and Wilson come in for their share of blame, while the French school is ignored. The author proclaims himself a pure Willanist, but he comes out strongly in his statements that diatheses, "gout, struma, syphilis," modify the course and appearance of eczema. Bazin has said that he was proud to call himself a Willanist!

The author, further, does not believe that eczema can be produced upon a healthy person, and discards all Hebra's croton-oil experiments. He states that eczematous subjects are always possessed of "nutritive debility." He considers exudative phenomena of the greatest importance as typical of the disease. He believes eczema to be a neurosis, "the nerve irritation being persistent and moderate. . . . An impressionable condition of the nervous system, or a lowering of nerve-tone is an essential condition in the evolution of eczema." He simplifies classification by bringing all eczemas into three classes—*E. simplex*, *E. rubrum*, *E. impetiginodes.*

The therapeutics are admirably laid out, the different indications being grouped, and each of the series disposed of in succession, the why and the wherefore of each remedy being laid down in its place. Great stress is laid upon not irritating the early stages, and upon looking out in the chronic stage, especially in old persons, that the kidneys functionate properly. Very little faith is put in arsenic. Nothing strictly new in remedies or methods of treatment appears, but the arrangement of the therapeutic indications is a most happy one. The book itself is compact and neatly gotten up, and will prove particularly valuable to the general practitioner.

ART. III.—*A Treatise on Medical Electricity, Theoretical and Practical, and its Use in the Treatment of Paralysis, Neuralgia, and other Diseases.* By JULIUS ALTHAUS, M. D., etc. Second edition, revised and partly rewritten. Philadelphia: Lindsay & Blakiston. 1870. 12mo, pp. 676.

IN a review of the first edition of the work before us, published eleven years ago, the writer said: "No work covering the whole ground of medical electricity has, prior to the publication of Dr. Althaus's volume, issued either from the American or English press. Aside, therefore, from any intrinsic merits of the book, the fact that it is the pioneer in this species of literature should insure for it the attention and respectful consideration of the medical profession. It is only by the dissemination of works such as that before us, that medical electricity can be taken entirely out of the hands of the charlatans and placed upon its proper footing as a therapeutical agent."

The second edition of Dr. Althaus's treatise is very greatly improved, and we can reaffirm all that is contained in the foregoing extract. But, since that opinion was written, many works on medical electricity have appeared both in this country and in Europe, and several, we are bound to say, are superior to the one now under notice. The author has for several years devoted himself to the study of nervous affections, and, though his investigations have not been characterized by much originality, he is, nevertheless, a painstaking and careful observer.

The thorough study of electricity in its physiological and therapeutical relations is indispensable to any physician who undertakes to treat affections of the nervous system. And yet, notwithstanding this fact, they as a class know little or nothing about this powerful and frequently efficacious agent. If they use it they do so in a hap-hazard sort of a way, and are just as likely to do harm as benefit with it. Undoubtedly, however, much good has been accomplished in this country by the publication of Althaus's, Morgan's, and Meyer's monographs, and the circulation of such works as those of Remak, Duchenne, Benedict, and others. That the present treatise is capable of

accomplishing much for the sciences of electro-physiology and therapeutics is very evident, and we therefore commend it to all who require enlightenment on the subjects, or who wish a good guide in their practice.

In the printed "Minutes" of the Commissioners of Public Charities and Correction of this city, dated June 23, 1870, there is published a very important paper; and, inasmuch as the committing of the paper to the medium in which it is printed will probably prove the surest means of consigning it to entire oblivion, we shall endeavor to do what we can to rescue it from so undeserved a fate.

It is a report by Dr. Jacobi, of this city, to the Medical Board of the Infants' Hospital, on the subject of "*The Raising and Education of Abandoned Children in Europe.*" This report being transmitted by the Medical Board to the Commissioners of Public Charities and Correction—under whose authority the Infants' Hospital is placed—they have with a wise liberality printed the same in their minutes, though we presume they are not authorized to publish it at large. But, even for putting the report in this shape so as to make it available for those especially concerned with it, the Commissioners deserve great credit, and should receive the thanks of the profession.

The paper is of such a character that it is impossible to make any analysis of it. We therefore content ourselves with stating merely its plan and giving its conclusions. The object of the paper is to draw from the experiences of Europe some inferences which may be of service to us in this country, respecting the rearing of infants; and Dr. Jacobi, in a visit to Europe last year, made it his special business to examine into the methods adopted there, and to gather statistics and results. As is well known to the profession here, the plan of collecting infants in large asylums or hospitals is universally abandoned in Europe, experience having shown that the results thereby gained were immensely more disastrous than by the method of boarding out. Now, in this paper Dr.

Jacobi details the methods, experiences, and results, arrived at in the important centres of Paris, Naples, Rome, Florence, St. Petersburg, Moscow, Vienna, Prague, Munich, Hamburg, Berlin, and London. Of course no one for a moment will suppose that the question of caring for the young infant, whether of legitimate or illegitimate extraction, in these monarchical countries, is to be an absolute guide to us. For many elements, which there fix the status of the child, and enable the ruling powers to secure ample provision by boarding out, are wanting here. But the lesson to be learned is in the result arrived at. The means for accomplishing this result will, of course, be modified with the changed conditions and surroundings of the infant in different countries.

Now, the result arrived at in Europe, where the experiments have been tried on a scale of sufficient magnitude to entitle them to reliability, argues directly against attempting to rear babies in institutions either by hand-feeding or nursing. For the purposes of education, however, the necessity for massing of children *after five years of age*—when the danger of that frightful mortality peculiar to these first years of life is passed—is equally well demonstrated.

The unsatisfactory experiences in this country of the asylum plan lead us to venture the wish that the European method, under strict and wise supervision of competent authority, may be attempted on a more liberal and extended scale than yet adopted. The results, no matter what they may be, can scarcely prove more disastrous than the present.

Paulet & Sazarin's splendid work on Topographical Anatomy, which has been three years in course of publication, is now completed. The text, containing 1,048 pages, is by Paulet, and the drawings—an atlas of 144 plates—are by Sazarin. The book is not merely a descriptive anatomy, but embraces the principal relations of topographical anatomy to pathology and to surgery.

Messrs. Wm. Wood & Co., of this city, announce as now ready a Treatise on the Theory and Practice of Obstetrics. By Prof. W. H. Byford, of Chicago. Also ready in Septem-

ber, Epilepsy, Anatomo-Pathological and Clinical Notes. By M. Gonzales Echeverria, M. D., of this city. This work contains notes based on the history of four hundred and forty-three cases.

Messrs. John E. Potter & Co. announce Diseases of the American Horse, and Cattle, and Sheep; their Treatment, with a List and full Description of the Medicines employed. By Prof. Robert McClure, M. D., V. S.

Books and Pamphlets Received.—Summer Mortality in the Cities of the United States. By Stephen Rogers, M. D. Pamphlet, reprint from the Transactions of the New York Academy of Medicine. (From the Author.)

Annual Report of the Officers of the Alabama Insane Hospital, at Tuscaloosa, for the Year 1869. Pamphlet, pp. 24.

An Address on the Natural History and Pathological Osteology of the Horse, delivered before the Annual Meeting of the Connecticut Board of Agriculture, at Middletown, January, 1870. By H. Cressy, M. D. Pamphlet, pp. 16. (From the Author.)

Circular, University of Michigan: Memorial on Female Medical Education, being a Report to the Regents of the University of Michigan. By a Committee of the Faculty.

Annual Announcement and Catalogue of St. Louis Medical College, St. Louis, Mo.

Annual Announcement and Catalogue of the National Medical College, Washington, D. C.

Second Annual Announcement and Catalogue of the Kansas City College of Physicians and Surgeons.

Annual Circular and Catalogue, School of Mines, Columbia College, New York City.

Proceedings of the American Pharmaceutical Association, at the Seventeenth Annual Meeting held in Chicago, Illinois, September, 1869. Also, the Constitution and Roll of Members. Philadelphia: Merrihew & Son. 1870, 8vo, pp. 468.

Nearly one-quarter of this pamphlet is taken up with the valuable Report on the Progress of Pharmacy for the year, by F. Hoffmann, Ph. D., of this city. This report we have already noticed and quoted from at some length. The whole volume is replete with information most important, not alone to the pharmaceutist, but to the physician.

Reports on the Progress of Medicine.

OBSTETRICS AND DISEASES OF WOMEN.

1.—*Cæsarean Operation; Proposed Modification.* [Lancet, April 16, 1870.]

Seeing how often women perish after this operation, from hæmorrhage into the peritoneal cavity, or from penetration into the latter of the lochial fluid, M. Tarnier proposes, before incising the uterine walls, to apply seven sutures on each side between the lips of the abdominal wound and the uncut uterine walls. The latter are then to be divided, and the operation to be concluded in the usual way. M. Tarnier, who brought this proposal before the Surgical Society of Paris, found much opposition; it was shown that the dangers of hæmorrhage are not so great as he supposes, and that death is mostly due to inflammation of the peritonæum unconnected with effusion of fluid.

2.—*Normal Position of the Uterus.* [Boston Medical and Surgical Journal, June 2, 1870.]

The following remarks are the conclusion of an elaborate article in the last number of *Archiv für Gynäkologie* of Berlin on the normal position of the uterus, by Carl Credé, of Leipsic.

1. Anteflexion in a varying degree is the physiological condition of the uterus in nearly half of all women.

2. The uterus has its correct physiological position, which is exactly perpendicular to the floor of the pelvis, only in a third of women.

3. Retro-displacements of the uterus, as retroflexion and retroversion, are the rarest forms of displacements, and therefore of the most pathological importance.

4. Versions and flexions of the uterus, which can be called physiological in half the cases, are very slight.

It is to be strongly hoped that more numerous and more exact observations will confirm these results of our own researches.

The modern mechanical treatment of versions and flexions of the uterus has far outstripped anatomical and physiological observations, and has, according to our deliberate and unprejudiced decision, indecently overstepped its proper limits.

As we are convinced that anteversions and flexions are normal positions of the uterus, that the pathological conditions accompanying these are essential, and that these displacements are of no importance, we hope that the at least superfluous and in many cases dangerous mechanical intra-uterine treatment with probes and pessaries will be in great part abandoned, and such a course will certainly benefit the women.

Only where the anteflexion is extreme, so that the escape of fluids from the uterus is prevented, and we have symptoms (often due also to narrowing of the cervical canal) of menstrual colic, retention of mucus and blood, sterility, etc., is there any indication for the repeated reposition of the uterus, or an operation for enlarging the narrowed cervix, measures sometimes of the greatest benefit. But, for ante-displacements, vaginal and intra-uterine pessaries are mostly quite superfluous.

On the contrary, in cases of retroversion, and especially retroflexion, there is full justification for mechanical treatment.

Here, however, first remove all attendant complications, for in many

cases after the cure of all such complications, in spite of retro-displacement persisting in a greater or less degree, the former bad symptoms of any importance disappear.

In such cases all preliminary mechanical treatment can at least be dispensed with.

3.—*Removal of the Entire Uterus.* [Medical Times and Gazette, December 18, 1869.]

At the meeting of the Académie de Médecine, December 7th, M. Péan presented a patient who excited great interest on account of the nature of the operation she had undergone. Indeed, M. Péan, one of Nélaton's most distinguished pupils, has already established a high reputation as a famous operator. First coming forward to establish, what had long been denied, the possibility of performing ovariotomy with success in Paris, he next introduced a patient to the Academy whose spleen he had removed, and now exhibits another, not only as an example of success in a complicated case of ovariotomy, but of the far more remarkable fact of having undergone the removal of the entire uterus and its appendages. The case was, indeed, a complicated one, for there was a very large cyst of the left ovary, the uterus was greatly hypertrophied, mounting up above the umbilicus and containing a cyst, while a fibrous tumor occupied the right ovary, and a cyst the right tube. The existence of a movable fibrous tumor, independent of the cyst and of hypertrophy of the uterus, was recognized prior to the operation; but in what proportions these lesions existed could not be ascertained, by reason of the adhesions which united the various tumors to each other. Having exposed the ovarian cyst by a long incision, M. Péan commenced, as is his custom, its removal piecemeal (*morcelant*), employing his long cauterizing irons heated to whiteness. Having in this way removed a notable portion of the cyst, he came upon the uterus, enormous in size, soft, fluctuating, and adherent on every side. The adhesions were very vascular, and any rupture of these gave rise to hæmorrhage, which had to be arrested by heated irons. The only thing that seemed feasible was the removal of the diseased uterus at the same time with the other tumors. M. Péan would not cut through the cervix, as this was excessively hypertrophied, equalling a fist in size, but carried his incision through the vagina. He next passed a double thread by the abdominal wound through the vagina from before backward, by means of which he practised two ligatures. That on the left side comprised the great ovarian cyst, and the other embraced all the portion of the vagina corresponding to the uterus, together with the right ovary and tube. An incision was made just above the ligatures, and the parts comprised were removed by a considerable amount of traction, the double pedicle thus formed being brought in contact with the abdominal parietes. This portion of the wound was not united, three caoutchouc tubes being inserted. The adhesions were too intimate to allow of the separation of the fundus of the cyst from the wall of the lesser pelvis. It was left *in situ*, but was spontaneously discharged on the thirtieth day, by which time solid adhesions had closed up the vaginal incision, without leaving any perforation where the ligatures had been. The recovery was complete, and when the patient was presented the operation had been performed three months.

4.—*Removal of a Horseshoe Pessary from the Female Bladder.* Reported by B. T. Buckley, M. D. [Chicago Medical Examiner, December, 1869.]

On the night of the 28th of February last, was called to visit Mrs. B., a young married lady, residing about two miles from the city. Found her

suffering severely from pain in the region of the bladder. She informed me that her father's family physician had visited her on that day, and, after an examination, told her that she was laboring under anteversion of the uterus, and that it would be necessary to introduce some instrument to keep the organ *in situ*. Her physician, being in very poor health, was taken worse at this visit (and it was the last one he ever made), went home, took to his bed, lingered about five weeks, and died. Apprehending that there was some retention of urine, I introduced the catheter, but found the bladder empty, or nearly so. Examined the vagina, but found no pessary. There was slight prolapsus, with anteflexion. She had become pregnant just previous to this occurrence; and I supposed that these paroxysms of pain were the result of increased sensibility of the uterus and urinary organs, consequent upon partial displacement, and such as we sometimes meet with in cases of recently-married women, without any displacement of the uterus whatever. I visited her two or three times a week, for a short time, without any benefit. Drs. DePuy and Mease were called in consultation. After receiving a history of the case, and making an examination, concurred in my opinion or diagnosis of the case. I carried out the suggestions as to treatment, made by the consulting physicians, a short time, without any improvement. The paroxysms became more frequent and severe. By this time, the patient was suffering from constipation, dysuria, and more or less tenesmus. The uterus had passed down considerably below its normal position. I several times attempted to put her under the influence of chloroform, for the purpose of making a more thorough examination, but the effect upon the patient was so distressing, that I was compelled by patient and friends to desist. She gradually grew worse; the symptoms became somewhat alarming, from almost constant pain. Dr. J. B. Lyman, of Rockford, was called as additional counsel. She now consented to the use of anæsthetics, and accordingly was put under the influence of chloroform. Dr. Lyman introduced a sound into the bladder, and, by digital examination, ascertained that there was some foreign substance in that viscus; and we came to the conclusion that it was a pessary. Upon further consultation, the patient was allowed to rest for the night, and Dr. Wm. H. Byford, of Chicago, was sent for, who, without much difficulty, effected its extraction.

There were present Drs. Lyman, DePuy, Mease, and myself. The patient was placed under the influence of chloroform, and another thorough examination made. The removal was accomplished by dilating the urethra, and extracting it with forceps. The little finger of the left hand was first passed into the bladder, and search made for the instrument, but it was beyond reach of this member. The forefinger of the left hand was next introduced, and the pessary could be felt so remote as to make it impossible to seize hold of it or exactly determine its position. The bladder contained several ounces of urine, and the instrument was easily displaced by the motion of the finger. After the urine was drawn off by a catheter, the index-finger was again inserted into the bladder, when, in consequence of the contraction of that organ, the pessary was brought down close to the pubis, at the opening into the urethra, and was easily controlled. By the forefinger, the pessary was drawn close up to the urethra, with the open end at the right hand of the operator, and the end of one of the branches placed as nearly as possible to the entrance of that canal. Ricord's phymosis forceps was next passed into the bladder, the end of the bar seized, and extraction commenced; but very soon the hold upon it gave way, and the instrument returned to its old position. It was again properly placed by the introducer's index-finger, and a second time taken hold of by the forceps. The bar was easily drawn out this time to the external orifice of the urethra, and, by turning strongly down toward the vaginal opening,

one-third of the instrument showed itself, and the balance quickly followed.

The time occupied by the efforts at extraction was about ten minutes. All present were surprised at the ease with which the fingers were passed through the urethra and the dexterity of the manœuvre that brought that disagreeable occupant of the bladder to light. As before remarked, the patient was a young married woman, and the genital organs were of virgin, etc., while the pessary was tolerably large. It measured one and three-quarter inches across from one side to the other, and was two inches and a half long. The diameter of the rod was three-eighths of an inch. The extracted instrument was encrusted with the urinary deposits pretty much all over. It had been in the bladder about three months. The patient promptly recovered, with no treatment, save the use of some light anodynes, and is progressing favorably in her pregnancy.

There can be no doubt, now, that this pessary was introduced into the bladder by mistake, instead of the vagina, which, I think, might very easily be effected. The physician, who was a man of experience, and had used the pessary frequently before, was sick, and laboring under the effects of opium, to such an extent as to be easily confused; and, in fact, though the pessary had disappeared, so that he could not find it, was entirely unable to account for its loss. Dr. H. R. Storer, of Boston, records the only other case, so far as I am informed, of this singular accident, and gives a very graphic description of the difficulties he met with when extracting it, in the *Medical Record* of July 15, 1868. Dr. H. W. Jones, of Chicago, a short time since, saw a case in which the pessary was accidentally introduced into the rectum, instead of the vagina.

5.—*Extra-uterine Pregnancy.—Cæsarean Operation made with Caustics.* [Lyon Médicale, February 13, 1870.]

M. Depaul communicated to the *Société de Chirurgie* (December 8, 1869) a case of this kind, and has published the same at length in the journal above mentioned:

A woman was brought to the hospital as laboring under an abnormal conception. The time when delivery should have taken place was long since passed, and it was easy to determine that the case was one of extra-uterine pregnancy.

This woman had already had several attacks of peritoneal inflammation, and the doctor witnessed another. When this had subsided, says Dr. Depaul, I thought it necessary to intervene for fear of new accidents which might prove fatal. I therefore placed upon the median line a train of Vienna caustic, in order to destroy the skin in all its thickness. After twenty-four hours I dissected off the scab, and applied a new coat of caustic, which this time took effect upon the muscles and aponeurosis. Two or three days after, the eschar was again dissected off. The next day I saw, oozing out through a small aperture, the size of a pin's-head, a liquid, and in the liquid a soapy matter, which I recognized as the sebaceous matter covering the fœtus. I enlarged the opening, and immediately ascertained the presence of a child. I made another incision from above downward, taking great care not to pass the limits of the adhesions. The opening was still too small, for the child was the size of a fœtus at term. Then, with strong scissors, I made a section of the child in several fragments, which were easy to extract. The sac was destroyed by suppuration; it retracted by degrees, and there remained only a minute fistula leading to a cavity the size of a small apple. The cure, although certain, was not yet complete, when, on the eighteenth or nineteenth day after the operation, this woman died in a few hours of cholera, which had made its appearance in the hospital.

6.—*Influence of Electricity upon Uterine Contractions.* [Chicago Medical Journal, April, 1870.]

M. De St. Germain presents to the same society the results of twelve experiments upon the influence of electricity upon parturition, as follows:

1. In no case could uterine contractions be induced, unless they had already occurred spontaneously.

2. In each case in which the contractions, having already commenced, recurred at intervals of fifteen or twenty minutes, the application of the conductors to the lateral regions of the abdominal surface was followed in about ten minutes by a considerable acceleration in the uterine contractions.

3. Each contraction induced by electricity was of much longer duration and much more severe than the others.

4. The dilatation of the neck appeared to proceed constantly with rapidity under the influence of galvanic excitation.

5. In all the cases observed by us up to this time, the expulsion of the placenta has followed immediately that of the infant.

It was either projected spontaneously outside of the vulva immediately after the expulsion of the fœtus, or was found in the vagina, and withdrawn without the least traction.

6. Twice only was a slight bluish discoloration observed upon the infant, and in one of these the cyanosis could be attributed to the closely-encircling cord.—*Gazette des Hôpitaux.*

7.—*The Indication of Sex afforded by Beatings of the Fœtal Heart.* By James Cumming, M. B. [Edinburgh Medical Journal, June, 1870.]

Table I., Males.

The first case was one of twins, the heart of the one fœtus was heard in the right groin beating 110 in the minute, and on delivery it proved to be a male; the second heart was heard in the left hypochondrium beating 154, and on delivery it was found to be a female.

2.	Fœtal pulsation,	138	per minute.	15.	Fœtal pulsation,	116	per minute.
3.	" "	138	"	16.	" "	120	"
4.	" "	135	"	17.	" "	120	"
5.	" "	130	"	18.	" "	138	"
6.	" "	130	"	19.	" "	125	"
7.	" "	132	"	20.	" "	140	"
8.	" "	132	"	21.	" "	140	"
9.	" "	140	"	22.	" "	137	"
10.	" "	132	"	23.	" "	140	"
11.	" "	140	"	24.	" "	141	"
12.	" "	136	"	25.	" "	122	"
13.	" "	133	"	26.	" "	120	"
14.	" "	134	"				

Table II., Females.

1.	Fœtal pulsation,	150	per minute.	9.	Fœtal pulsation,	140	per minute.
2.	" "	142	"	10.	" "	152	"
3.	" "	140	"	11.	" "	140	"
4.	" "	150	"	12.	" "	143	"
5.	" "	144	"	13.	" "	144	"
6.	" "	140	"	14.	" "	141	"
7.	" "	140	"	15.	" "	160	"
8.	" "	144	"				

From these two tables it seems that when the pulsation varies from 120 to 140, the probability is that the fœtus will be a male, and when the pulsation varies from 140 to 160, the fœtus will likely be found to be a female. But there are some exceptions to these facts. In three cases in which the pulsation was from 150 to 160, the fœtus proved to be a male; and in fifteen cases in which the pulsation varied from 116 to 138, the fœtuses were found to be females. It therefore appears that there is less frequent variation in the pulsation in the male fœtus than in the female; or rather that there are fewer cases in which the heart's action exceeds 140 in the male, than that it falls below that number in the female.

These tables are exceedingly interesting, however, *so far as they go;* and the subject is well worthy further attention.

8.—*Gangrene of the Vagina following Application of the Perchloride of Iron.* [Boston Medical and Surgical Journal, December 9, 1869.]

The *Bulletin Général de Thérapeutique* quotes the case from the *Gazette des Hôpitaux.* A lady, forty years of age, of excellent constitution, and usually enjoying good health, having gone through a natural and easy labor eight months previous, had been suffering from slight metrorrhagia of three weeks' duration, when she consulted Dr. Tessier at the commencement of March, 1867. The 15th of March there suddenly occurred, without discoverable cause, a discharge of sanguinolent serum, with clots intermingled, from a litre and a half to two litres in quantity. This was attended with paleness, cold sweats, and chilling of the extremities. The pulse was imperceptible, the action of the heart feeble and slow, the voice extinct. Dr. Tessier having been called in haste, covered the abdomen with cold compresses, and introduced into the vagina, without the speculum, a tampon consisting of dossils of "charpie" dipped in pure perchloride of iron; and, in addition other masses of the same kind of tampon, soaked in an aqueous solution of the perchloride in the proportion of one part to four. At the same time he gave, at intervals of ten minutes, powders of ergot of rye, consisting of twenty-five centigrammes each; cold beef-tea, ice, and subsequently tea containing rum. In two hours the flux was arrested. The next day the more superficial layers of charpie were removed; and the remaining ones—those soaked with pure perchloride of iron—were taken away at the end of forty-eight hours, without the patient complaining of the least pain. Five days after, there was a feeling of burning in the vagina. Emollient injections brought away mucous *débris.* The seventeenth day after the plugging, a piece of mucous membrane six centimetres long and two broad was discharged. The patient had a slow convalescence.

About six weeks afterward, the menses being pale and scanty, M. Tessier made a digital examination, and detected, at a distance of four centimetres from the vulva, a very fine fibrous ring, scarcely admitting the passage of the finger. Two centimetres farther there was a second ring, upon which the cervix uteri rested.

In communicating the case to the *Société de Médecine de Paris,* Dr. Tessier added that he knew of two other instances of introduction of perchloride of iron into the vagina, with the same accident resulting. And Dr. Léon Gros, who was appointed to make a report upon the subject, concluded, from his survey of the facts, that in cases of uterine hæmorrhage, where it may be thought necessary to apply pure perchloride of iron within the vagina, certain precautions are necessary. These precautions consist in beginning by filling the *culs-de-sac,* by means of the speculum, with "charpie," either dry, or soaked in a solution of the perchloride; in limit-

ing the application of the undiluted styptic of iron to the neck of the womb; and in surrounding the latter organ with a sufficient quantity of charpie to prevent the contact of the agent with, and its caustic action upon the vaginal mucous membrane. This is the more important if the vagina be at any point bare of epithelium.

9.—*Pregnancy with Hymen unbroken.*

Dr. H. L. Horton, of Morrisania, N. Y., records, *Medical and Surgical Reporter*, an interesting case of this uncommon condition. On attempting to make a vaginal examination—the patient being then in labor—no opening whatever could be detected by the sense of touch. An ocular inspection was then made, and the obstruction presented the appearance of a dense, whitish, fibrous structure, merging into the surrounding tissue guarding the entrance to the vagina, so gradually, that no distinct line of demarcation could be observed. About the centre of the lower half of the obstruction, the patient being upon her back, I detected a small spot of reddish, tenacious mucus, which could not be detached by the cotton, but, upon taking hold of it with a pair of forceps, it was found to connect through a small, round opening with something inside. A small silver probe, whose bulb point was exactly one-sixteenth of an inch in diameter, could, with a slight degree of force, be passed through the opening, the border of which appeared to be somewhat thicker than the surrounding structure, so that the probe passed with something of an elastic spring. By bending the point of the probe nearly to a right angle and passing it through the opening, I could, by depressing well the outer extremity, observe the bulb move along the inner side of the obstruction, which I now made out to be about the thickness of an ordinary dressed sheepskin. Seeing my way clear, I at once introduced a bistoury, and made a crucial incision, after which I introduced my finger, and very much enlarged the opening by tearing, so as to avoid any hæmorrhage, should there be any blood-vessels in the structure. After the escape of a few ounces of dark, ropy-looking fluid, on introducing my finger I could now distinctly feel the bag of waters, which I at once ruptured, after which there could be distinctly made out a vertex presentation, with a L. O. I. position, anterior variety. The labor was completed in seventeen hours from the time that the pains first set in.

10.—*Dropsy of the Fallopian Tube.* [Medical Record.]

At the March meeting of the Pathological Society, Dr. E. R. Peaslee presented a specimen of intra-abdominal tumor, with the following remarks:

Mr. President: I bring this preparation for two reasons: in the first place, it is interesting in point of diagnosis; and, secondly, it is in itself a preparation of very rare occurrence.

The patient, a lady, forty-one years, first came to me from the country, last May. I saw her on board of one of the North River steamers. She had an abdominal tumor, which was supposed by the physician who sent her to me to be ovarian in character. The question was in regard to the propriety of removing the growth. I found the uterus completely retroverted, so that the os was on a level with the symphysis pubis, was very high up, and I could with difficulty reach it with the index-finger. There seemed to be continuously in structure with the posterior wall of the uterus a solid tumor about the size of the fist. I could get no fluctuation in the mass; the whole was impacted in the pelvis so completely that it could not be moved at all. I could with difficulty pass the sound in the uterus to

the depth of just three inches, but could not move the organ to the right or left. The tumor rose a little above the umbilicus, to the right side and to the middle. This upper portion evidently contained a fluid, and fluctuation was very distinct.

The tumor had been detected, for the first time, ten years ago. She menstruated regularly, and had never suffered from menorrhagia. She had been gradually failing in health, became quite thin, and was also anasarcous in her lower extremities. I regarded the growth as a fibro-cystic tumor of the uterus, and advised non-interference with the case until the sac should become so large as to require tapping, which operation in itself would enable us the better to determine its real character. She was first tapped about the first of October, and fifteen pounds were drawn off, and, refilling, was tapped again in December, when ten pounds were evacuated, leaving as large a mass as before the operation. Still the physician persisted in the diagnosis.

I saw her again about two weeks ago, she having come to me then with the intention of having it decided whether she actually had ovarian tumor or not. She had filled again, perhaps to a greater extent than before; so that it became very necessary to tap her again, and I did so with a view of determining the precise condition of things, in order afterward to decide what should be done. I removed eighteen pounds of fluid. It resembled precisely the usual ovarian fluid, especially that taken a second time, except that it was slightly opalescent, giving the appearance as if mixed with a small quantity of milk. I tested it with heat and nitric acid, and found that it contained about half its bulk of albumen. After the sac was evacuated, it was very easy to find that the tumor was quite adherent to the lower part and on each side above. On passing the finger into the vagina, however, the solid mass which I expected to find had entirely disappeared; it was a mass, as I said before, so very solid that, to my sense of touch, it was clearly a fibrous mass and part of the uterus, more especially the fundus. That had entirely disappeared; I could not reach any sign of the existence of such a mass. The abdominal wall had been so distended that I could easily fold it over the fundus (as is my custom in such cases), and fairly grasp the organ. I could not feel any tumor there; in fact, I could find nothing but the sac which I had evacuated, and of course this gave the idea that, after all, it was an ovarian tumor, and a single sac probably. I then introduced the sound in the uterus, and, bringing it forward upon the instrument, produced an anteflexion. I could then with ease bring the organ forward, and could feel very distinctly the fundus and both the horns. Then I could feel that something extended down from the right side, leading to a solid mass, which I had felt before. There was a sac that had not yet been touched, or solid mass, but I could also feel, passing off from the left side of the uterus, a pedicle which was evidently continuous with the large sac which I had evacuated, which, of course, made it at first very certain that we had an ovarian tumor, rising from the left side. One thing made me doubt my diagnosis, and that was the extreme thickness, roundness, and evenness of the pedicle. I could not find its lower edge; it was of an even thickness, equal to that of the two fingers, all the way down. I was forced to doubt very much that it was an ovarian tumor at all, but I nevertheless considered it proper to advise the patient to have an incision made when her health should be sufficiently improved.

She went on well for three days after the tapping, when she began to lose her appetite, and all that I could do had no effect upon this condition. She had no fever at any time, neither signs of inflammation. She lived until the ninth day, and died of exhaustion.

At the time of the autopsy, Dr. Peaslee stated that the cavity of the uterus was but three inches long, as previously made out. On the right side a true ovarian cyst existed, but on the left was a *bona-fide* tumor of the Fallopian tube of very large size, the upper rim of which was the large, even, and round mass of tissue which aroused the suspicion of a pedicle. It seems that the tube had become occluded at the very commencement of the uterus; accumulation took place beyond, until the tube itself was distended into a sac with the capacity of eighteen pounds. The whole was adherent to every thing in its neighborhood, rectum, sigmoid flexure, and to both iliac fossæ. As the sac contained half a pint of blood, which, in her condition, was an enormous amount to lose, Dr. Peaslee concluded that death was the direct result of hæmorrhage. As it was evident that the interior of the sac was uninjured during the manipulations of tapping, the doctor concluded that the blood oozed into the sac after the pressure was taken off. In answer to a question, he stated that the patient had been the mother of three children.

11.—*Accidental Wound of an Artery during the Operation for Vesico-Vaginal Fistula; Fatal Result.* [L'Union Médicale and Boston Medical and Surgical Journal.]

M. Paul Horteloup communicated the case to the *Société Impériale de Chirurgie.* He was operating at the Hôpital Beaujon for vesico-vaginal fistula, and was just making the last cut with the bistoury, when a jet of blood struck his face, and the vagina was filled at once by the hæmorrhage. Neither ice nor the tampon stopped the flow, which was, however, controlled by seizing the posterior lip of the fistula with a screw forceps and a polypus forceps. The tampon, injections of ice-water into the bladder, compresses wetted with cold water to the abdomen, were used, and wine, beef-tea, and ice, administered. A few days after, the forceps were detached in the movements of the patient, and a new hæmorrhage set in, to be controlled as before, with the forceps. The patient, however, had lost so much blood, that she sank five days subsequently.

At the autopsy there was found general acute peritonitis, and a division through two-thirds the diameter of the left utero-ovarian artery.

12.—*The Treatment of Post-partum Hæmorrhage.* [Medical Times and Gazette, November 20, 1869.]

Dr. Robert Barnes, at a recent meeting of the London Obstetrical Society, read a paper on Uterine Hæmorrhage after Labor. The following abstract of the paper, and the discussion thereon—although it contains nothing novel—will, from the peculiarly practical nature of the procedure, and the authority of the eminent men taking part in the discussion, prove both interesting and serviceable to our readers:

The author endeavored to define the conditions upon which arrest of hæmorrhage after labor depended, the action of the remedies in common use, and the indications for resort to particular remedies. The remedies almost exclusively used depended for their efficacy upon their power of exciting contraction of the uterus. This presupposed nerve-force enough to respond to excitation; but, when this was exhausted, remedies failed. It became then necessary to seek a new power that would act under the condition of exhausted contractility. This was found in stypties like perchloride of iron, which acted by coagulating the blood in the mouths of the

open vessels, and corrugating the inner surface of the uterus. Acting exactly where ordinary means failed, it was a new power to save women from dying of hæmorrhage. Examining the action of ergot, compression of the uterus, and cold, he urged that these should not be trusted if they failed to act quickly; for, if they so failed, it was probably because contractility was gone. If persevered in beyond this point, they did harm. Ergot and cold added to the depression; kneading might bruise the uterus; all were apt to occasion some form of puerperal fever. The perchloride had in several cases been followed by death when used for injecting nævi; but this case was essentially different from that of injecting the uterus. In his own practice he had observed three orders of cases. In the first all recovered well, the hæmorrhage being immediately stopped; in some of these death would almost certainly have ensued but for the remedy. In the second series recovery occurred, phlegmasia dolens supervening; but phlegmasia dolens was not unusual after severe hæmorrhage, and some of these cases would have died but for the remedy. In the third class death followed, but the patients were moribund when the remedy was applied—it came too late. Here the remedy was transfusion. The practical lesson resulting from a review of these cases was, to observe the rule he had laid down—not to persist too long in the use of cold, kneading, and other remedies, but to resort to the perchloride before collapse had set in. Dr. Barnes showed a convenient case, constructed by Krohne & Sesemann, containing a set of his dilators, a Higginson's syringe with uterine tube, and a bottle for perchloride of iron.

Dr. Rogers could most cordially agree with every word of Dr. Barnes's admirable paper. He (Dr. Rogers) had first used the perchloride some fifteen years ago in post-partum hæmorrhage, having failed with a strong solution of alum. He had since then employed it five or six times, and, in every case, successfully. He thought Dr. Barnes had omitted the mention of galvanism, on which he placed some reliance, and which had been advocated by his late friend Dr. Mackenzie.

Dr. Cleveland thought one of the difficulties in the treatment of post-partum hæmorrhage consisted in determining when the means in general use should give way to the remedy recommended by the author. It was difficult, too, when single-handed, to leave the patient, for ever so short a time, to prepare an injection. He had himself used an eight-ounce india-rubber bottle, to which was easily attached a flexible male catheter. This could be used more readily than a Higginson's syringe, and with less risk of injecting air. He would inquire if the author had used emetics, as he had himself witnessed the good effect of vomiting on more than one occasion. He would also ask if the free use of stimulants, especially at the commencement of flooding, was not open to objection.

Dr. Wynn Williams was hardly prepared to hear that the knowledge of perchloride of iron as a stypic in these cases was as limited as the author supposed. He himself had used it for a long time, although not exactly in the same manner as the author of the paper, but in a way which he might call the ready method. This consisted in taking a sponge, on which some of the tincture of the perchloride had been poured, and passing it into the uterus through the hollow of the hand already introduced, after, of course, previously emptying the uterus of clots, and then sponging the interior of the uterus with it, leaving it in the uterus, if seen fit, with a string attached. He thought this plan less objectionable than injecting a considerable quantity of fluid. The stains on the hands of the operator were readily removed by a solution of oxalic acid or salts of lemon.

Dr. Braxton Hicks most cordially agreed with the whole paper. He wished to add, however, a few remarks. In the first place he thought

there was a considerable difference in different cases as to the condition of the internal surface of the uterus after expulsion of the placenta. In some uteri examined after death, the large apertures of the sinuses described by many authors were absent. There were of course the arterial openings and those of their return veins—of considerable size certainly, but not very large. In others it would be found that the sinuses, in their oblique passage through the uterine walls, occasionally abutted on the line of separation of the placental decidua. When the placenta was removed, then the feeble wall gave way, and severe loss would result, unless the uterus contracted quite firmly. In the former case it did not require that severe uterine contraction, and the perchloride would readily act; in the latter it would probably be found that even the perchloride would fail to arrest this great stream. Enormous gushes he believed to be the result of a pre-accumulation which had been going on unobserved. To one class of cases Dr. Barnes had not alluded—viz., placenta prævia, where the cervical zone was relaxed after delivery. In these the perchloride applied to this surface was of much value. In severe cases also of abortion, when the uterus had been emptied, he had used it frequently with complete success, and without any untoward result. He used a somewhat weaker solution than Dr. Barnes.

Dr. Hall Davis could add his testimony to the value of the iron solutions. He had used them for several years among his hospital patients; scarcely a week passed without his resorting to them. He had used the pernitrate, the persulphate, and the perchloride, and had found them about equally efficacious. It was of the utmost importance before using them to empty the uterus of any contained clots, that the styptic might fairly come into contact with its internal surface.

Dr. Playfair referred to the importance of aiming at the prevention of post-partum hæmorrhage, and urged the careful following down of the contracting uterus with the hand. On the subject of the value of the perchloride, he could but add his testimony to that of the previous speakers.

Dr. Tyler Smith, after eulogizing the paper of Dr. Barnes, said that he believed but few cases of dangerous flooding would occur if in all cases a full dose of ergot were given immediately after the birth of the child. It would, in his opinion, be a vast improvement in obstetrics if the forceps could be substituted for ergot as now often given during labor, and if the ergot were administered habitually at the moment of birth, or while the head was passing the vulva. Besides the prevention of hæmorrhage, subinvolution of the uterus would become less frequent. This rule of giving ergot had been extensively followed by his advice, and with the best results, in India, where flooding was still more common than in this country.

Dr. Aveling feared that the styptic fluid might enter the circulation and produce thrombosis. He thought the principle good, but that the sponge plan of Dr. Williams might be safer than Dr. Barnes's. He would have liked to have heard some reference to transfusion.

The president (Dr. Graily Hewitt) thought the profession would be gratified in hearing, through the medium of this Society, the opinion of so many distinguished men on this important subject. After the decided opinions expressed in favor of the perchloride of iron, its use, so ably advocated by Dr. Barnes, would probably become more extended. As preventive of hæmorrhage he had great belief in pressure, and in fact the only cases in which he had seen hæmorrhage fatal under his own care were cases in which, unusual attention to the child being required, the uterus had not been uninterruptedly watched over. Transfusion, to which Dr. Aveling

had alluded, was adapted for cases of a somewhat different nature, where the hæmorrhage had ceased.

Dr. Barnes, in reply, said he had not forgotten either the subject of transfusion or prevention, but the problem set in this paper was how to deal with hæmorrhage when present. With regard to electricity, he had preceded his friend, the late Dr. Mackenzie, in proving the power of faradization in causing uterine contraction, but he had abandoned it because it was inconvenient, often intensely distressing to the patient, and inferior to other means. As to Dr. Hicks's remarks upon the frequent absence of large openings of sinuses on the inner surface of the uterus, he reminded the Society that the obliquity of the openings rendered it very difficult to find them; and that Dr. Chowne and others, by injecting the vena cava backward, showed that water would escape in torrents on the uterine surface. With reference to priority, he must say that he was surprised to hear such very general expressions of approval of the treatment; but that it was not yet a recognized plan was proved by the absence of mention of it in our text-books. It appeared to have been first used by D'Outrepont; it was pointedly recommended by Kiwisch in 1840; his own first published recommendation of it was in his Lettsomian Lectures on Placenta Prævia in 1857, and of course he had used it before that date. In conclusion, he expressed his belief that the perchloride of iron would come into general use as a recognized plan of treating uterine hæmorrhage.

13.—*Unique and Remarkable Case of Extra-Uterine Fœtation.* [Medical Press and Circular, December 8, 1869.]

Dr. Lecluyse gives a remarkable case of this accident. A woman of twenty-eight, with deformed pelvis, was operated on, and delivered by Cæsarean section, August 15, 1866. She again became pregnant and in labor on March 23, 1868. On examination, the fœtus could be felt beneath the abdominal walls; but the pains shortly ceased, and it was determined to postpone the operation of section. In a few days a vaginal discharge of menstrual or bloody character appeared; no motions of the fœtus were felt, and the lower portion of the abdomen formed a kind of sac for the fœtus.

Cæsarean section was now performed with every care, and a seven or eight months fœtus removed, which was well developed, and dead. The placenta was adherent to the intestines. The wound was closed by sutures, save at the lower part, from which the umbilical cord was allowed to depend, as it was not thought possible safely to detach the placenta by reason of its vascularity. On the fifth day the placenta was decomposed, and part of it removed; the patient died on the tenth day. On examination after death, it was found that the intestines bore no imprint of the placental attachment; but, what was most remarkable and interesting, the uterus, about the size of a goose-egg, was found in the right iliac fossa held by strong adhesions, and on its anterior aspect, and a little to the left of the mesial line, was the open wound left by the incision made in the former Cæsarean operation. The sides were cicatrized separately, and left a hiatus through which the ovum had escaped, and formed this remarkable and perhaps unique example.

14.—*Difficult Labor from Locking of Twins.* [Lancet, July 2, 1870.]

Dr. Rinter was called by a midwife to a woman twenty-eight years of age. In this case the child's head, after a breech presentation, was locked by complete absence of uterine contraction. Dr. Rinter found the whole

child born save the head, the uterus inert, and the mother very feverish. The child was dead, and in vain did the accoucheur try to find, with his finger, the chin, or the mouth; he could only feel the cranial bones without succeeding in making out the sutures. By the hand laid on the abdomen the presence of a second fœtus was made out. Tractions on the trunk of the child already extruded were unsuccessful. At last the forceps were used, and with much difficulty the head was extracted; but the operator was dismayed on seeing that it belonged to the *second* fœtus. The cord was soon divided, and a living boy handed to the nurse. The head of the *first* child was now sought for, the chin and mouth easily found, and the extraction effected. The placenta followed immediately; it was very large, and common to both children. The mother did well. Happily Dr. Rinter did not resolve to *diminish* the head when he found it so completely locked, and the child dead.—*Gaz. Méd. de Strasbourg.*

15.—*Obstruction of the Vagina with Retention of the Menstrual Fluid for Two Years.* By W. L. Appley, M. D. [Medical and Surgical Reporter, July 30, 1870.]

I was called October 1, 1868, to visit a widow lady aged forty, whose husband had been dead three years. She had given birth to a large child about twenty years ago; she had a tedious labor; I had not seen her since the death of her husband; I found her suffering (as I supposed) from retention of urine; she told me she had not voided urine in twenty-four hours. I advised the use of the catheter; she said she was willing to submit to any treatment that would relieve her of any of her suffering. I introduced the catheter into the bladder and drew off a large quantity of urine, which relieved her very much, although the abdomen was yet much distended. I could find neither labiæ, nymphæ nor clitoris; the vagina was imperforate; she told me she had not menstruated for about two years; since then she had complained of pain in the back and lower part of the belly, with regular monthly exacerbations of these symptoms, and at each period had observed a distinct increase in the size of the abdomen.

The abdominal tumor, in size, situation, and consistency, resembled the uterus at full time of pregnancy.

October 2d.—I was called again to see her; I found her suffering very much as the day previous, except the pain was more periodical, resembling labor-pains; her pulse small and frequent; skin cold and moist; features sunken; from her symptoms and appearance I thought her case alarming. The catheter was again used, and a large quantity of water passed off, which relieved the pain partially for a short time; I concluded that the only permanent relief was in opening the vagina, and that her life depended upon the operation; and that it must be done immediately. My assistants were three elderly, common-sense women; we placed the patient cross-wise of the bed so as to have the light of a window, each leg supported by an assistant, the third assistant administering the chloroform. I found the orifice of the vagina was obstructed by a dense thick membrane through which a fluctuation on the inner side could be felt like a flat, elastic tumor in the perinæum, feeling very much like an abscess. I determined to open the vagina with the scalpel; this I accomplished with some difficulty; first introducing the catheter into the bladder as a guide to prevent injury to that organ; and the forefinger of the left hand to guard the rectum; I made an incision with the scalpel as large as the meatus urinarius and the rectum would admit, without injury to those parts.

I found the obstructing membrane thicker than I supposed, and tough. I explored with the finger and cut with the knife, so as to enlarge the

opening the full size of the vagina, until I felt something like the distended membranes in a case of labor just before they are ruptured. I held my finger against this membrane, as I discovered a contraction of the uterus and abdominal muscles returning, which caused a sudden rupture, and a gush of restrained menstrual fluid took place, to the amount of one gallon or more, and very fetid, so much so that the assistants left the room. The uterus seemed to contract periodically, and the contents would issue in a stream. I made pressure over the uterus until the discharge ceased, then injected warm water freely and continued the injection for several days. The patient had no difficulty in voiding urine. After the operation she took light tonic and nourishing diet, and recovered rapidly without any unpleasant symptoms. She is now a healthy and fine-looking lady for one of her age.

A few days previous to my being called, and after her situation became very distressing, she applied to the nearest physician, who claimed to have experience and skill in treating female diseases. He, without examining the parts, gave her emenagogues and diuretics, furnished her a female syringe, and advised her to use vaginal injections. The medicine could do her no good, but might do harm, and the syringe she could not use.

Now, admitting the above case is no novelty, and that closure of the vagina is common, I think it shows, at least, the importance of physicians being on their guard, and of examining women carefully whose menses are obstructed.

16.—*Double Uterus and Vagina.* Reported by Mr. James Lane, of the Female Lock Hospital, London. [Lancet, July 16, 1870.]

M. S——, aged eighteen, was sent to the hospital from Woolwich on the 6th of January, 1870, under the Contagious Diseases Act, for a purulent vaginal discharge. On examination with the speculum, the vagina was found to be divided into two by a thick, strong, vertical septum, complete throughout, commencing immediately behind the urethral aperture, and extending upward to the uterus, with which it became continuous. There were, therefore, two vaginal canals, the rugæ of each being continued round the corresponding side of the septum. At the end of each was seen an os and cervix uteri, of normal appearance in every respect, but somewhat smaller than usual. A probe could be passed readily into the cervical canal of each. The external parts presented nothing unusual; and the girl was unaware of any peculiarity in her conformation. The right vagina was somewhat larger than the left, and in a rather more direct line with the vulvar aperture. She said she had menstruated regularly from her fifteenth year. While in the hospital she was examined with the speculum during a menstrual period, and the menstrual discharge was ascertained to proceed equally from both sides. She stated that she had been a prostitute for a month only. She was suffering from a purulent discharge and vaginitis in both vaginæ; for which she was treated in the usual way, and was discharged cured on the 23d of February.

This case was probably an extreme instance of that class of malformations in which there is a deficiency in the union of the two halves from which the uterus is originally formed. Non-union of the *body* of the uterus constitutes the uterus bicornis analogous to that found in animals; but here the division was continued through the cervix also, and in the form of a central septum through the whole length of the vagina. A drawing of a precisely similar malformation, after Busch, will be found in the article Uterus and its Appendages, by Dr. Arthur Farre, in the "Cyclopædia of Anatomy and Physiology," vol. v., p. 679.

17.—*Case of Inversion of the Uterus, treated by Elastic Pressure.* By W. H. Byford, M. D. [Chicago Medical Examiner, August, 1870.]

Mrs. H. N. H., aged twenty-two years, was confined with her third child at half-past eight o'clock A. M. on the 9th of March, 1870. The labor was about four hours' duration. The placenta was expelled spontaneously, in about half an hour after the child. Very little blood accompanied the placenta. As usual, the hand was placed over the hypogastric region, in order to ascertain the condition of the uterus. The organ was large and soft, and, in fifteen or twenty minutes after the delivery of the placenta, a copious hæmorrhage commenced, but was easily controlled by grasping the uterus through the abdominal wall. The contractions resulting from this treatment were prompt and obvious. I remained with the patient something like an hour and a half, when the hæmorrhage was completely controlled and the uterus well contracted. At twelve o'clock I was summoned by a messenger from the patient, with the information that she was flooding copiously. When I arrived, I found her prostrated very decidedly by loss of blood, and still bleeding. The uterus was large, reaching above the umbilicus, and very soft. Pressure and grasping caused it again to contract and throw out a large quantity of coagula and fluid blood. Fluid extract of ergot was administered as soon as it could be procured, cold applied to the urethra, and continued pressure kept up. The hæmorrhage soon entirely ceased, the uterus contracted well, and the contractions were painful more than ordinarily. The hæmorrhage did not return, but the patient had already lost so much blood that she was very greatly prostrated. The pulse was weak and rapid, perhaps one hundred and twenty strokes to the minute. Upon the slightest exertion, a sense of fainting was produced. She remained prostrated, so as to require stimulation and concentrated nourishment for thirty-six hours. From this time gradually rallied, and in twenty days was able to sit up some, while the pulse had regained its volume and usual frequency. From this time she improved quite rapidly, and in four weeks was riding and even walking about the streets some, with no special discomfort. The lochia was still somewhat copious, but colorless and "watery," as she expressed. On the 25th, the lochia was so abundant that I was led to make an examination. I found the cervix large and soft, but otherwise there was nothing unusual. The uterus could still be felt above the pubis. On the 28th, I left the city for two months, and, consequently, did not know any thing of her condition personally, until I returned on the 5th of June, and, consequently, rely upon her account of the progress of things.

She informed me that she continued to improve, and, as above stated, in about four weeks was riding out, and walking about the house and on the street, without inconvenience, except such as arose from debility, and that was not very considerable. On the 14th or 15th of April, while sitting on the vessel vomiting, she experienced slight tenesmus, and felt something pass out between the labia. Placing her hand upon the parts, she discovered a protrusion. She passed it back and sent for a physician. It was through the examination made at that time that she was found to have an inverted uterus. She was treated with sitz-baths and astringent injections into her vagina, for three or four weeks, when she was pronounced cured, and discharged. When I returned home I saw her on the 5th of June, and found the uterus inverted. It was about the ordinary size of the unimpregnated organ, and inverted all but the vaginal portion of the cervix. The density of the anterior walls and cervix seemed rather less than natural. Since she first discovered the protruding organ, the

patient had been subject to small losses of blood, and between these a serous or watery and sometimes mucous discharge from the vagina. Her general condition was tolerably good, although she had not entirely recovered from the debility caused by the copious hæmorrhage.

After lifting up the uterus as much as I could with two fingers, I placed an elastic bag under it, so as to make pressure upward and slightly forward, in the direction of its axis, and filled with tepid water, until the patient complained of severe, inconvenient pain, from distention. She was directed to remain in bed, and the instrument was left in place until the next day. The water was then allowed to flow out and the parts examined. I could discover no change in the condition of the uterus. The bag was again filled and the distention made as great as the patient could well bear. Upon emptying it again, on the third day, relaxation of the cervix was quite evident, and I felt encouraged to expect success. On the fourth day, the relaxation was so decided, that the fundus could be almost passed up into the os with the fingers. On the fifth day, when the water was again allowed to flow off, the uterus was found to have returned to its natural position. The patient was directed to remain in bed still, and the instrument removed from the vagina. On the sixth day, I passed my probe through the os uteri, two and a quarter inches, showing that the fundus was thoroughly restored to its shape and position. The patient remained in bed for two days more, and then gradually resumed her exercise until, on the 22d of June, she attended the wedding of one of her friends.

This case is remarkable from the manner of occurrence and for the ease with which the reduction of the inversion was effected. I think the last fact shows a very pliable condition of the organ, and, to some extent, explains the method of the accident. With reference to this, it is quite evident that the time of the completion of the inversion must have been the time of its discovery; for if the process of involution, at that late period, was so imperfect as that the uterus was large enough to pass, in considerable size, beyond the labia, it is reasonable to suppose that, had it been completely inverted before, it would have made its appearance before, and hence attracted the attention of the patient. When I first saw her upon my return, the involution appeared to be complete, and the organ was distant from the vaginal orifice. It certainly was not inverted at the end of three weeks from labor, and it was unquestionably larger at that time than usual. I do not believe that there was indentation, or any thing indicating the commencement of the process of inversion, on the 25th of March, when last I saw her before the accident. I am glad to have an opportunity of recording this case, as showing the great efficiency of elastic pressure, in the correction of the condition. It was very evident, from the daily observation of the case, that the reduction was effected, not by indenting the fundus, but by the relaxation of the cervix, and the passage of the whole body and fundus through it, and that the fundus was the last part to be rectified. The last labor of the patient, previous to this, was attended by very copious hæmorrhage and almost as great prostration as stated in this; and I think it would not be unreasonable to infer that my patient only represents a class of patients in whom the habitually flaccid condition of the uterus predisposes them to the accident.

This case, in many respects, is quite similar to one that occurred in the practice of Dr. A. Fisher, of this city, an experienced, intelligent, and careful practitioner. It is recorded in the October number of the *Chicago Medical Journal* for the year 1858. Dr. Fisher discovered the inversion on the 18th of May, thirty-eight days after delivery. No symptoms, except slight hæmorrhage, indicated any thing wrong. The doctor says:

"I made a digital examination, and, to my utter astonishment, found the uterus completely inverted, the fundus resting on the peritonæum." Dr. N. S. Davis, who was called to see the patient, in consultation with Dr. Fisher, regarded it as a case of spontaneous inversion, and said, in reference to it, in an editorial, in the same number of the *Journal:* "I questioned both the patient and her mother carefully and minutely, in regard to what transpired at the time of confinement, and I elicited no facts differing from the statements given by Dr. Fisher."

Miscellaneous and Scientific Notes.

The London committee on the Simpson Memorial has unanimously decided that the scheme of the erection of a hospital for the diseases of women, as a memorial of the late Sir James Y. Simpson, be acceded to, but that its erection be in accordance with Sir James's well-known and recently-expressed views.

Sir William Ferguson, Bart., has been elected to the presidency of the Royal College of Surgeons, London, thus breaking through the hitherto scrupulously-observed practice of selecting no one but an Examiner of the college for this post. The precedent thus established is a good one, and meets with the general approval of the medical press.

Prof. Brandt, of St. Petersburg, has just been elected corresponding member of the Academy of Sciences of Paris, in the section of Anatomy and Zoology, in the place of M. Garus, of Dresden; and Prof. Lebert, of Breslau, in the section of Medicine and Surgery, in the place of the late Sir William Lawrence, Bart.

A New Method of applying Intestinal Sutures.—Dr. Béranger-Férand, of Paris, chief physician to the French navy, describes in the *Lancet* the following handy device for applying intestinal sutures. The necessary materials consist of eight or ten ordinary pins nine millimetres in length, two corks, and a piece of sealing-wax. The way in which this simple apparatus is prepared is as follows: Each cork is cut out in the form of a quadrangular prism, of about six millimetres on each side, and of the length of the intestinal wound. Four or five pins are driven into each of these prisms, which they traverse

so that the points issue at the opposite surface, while the heads are brought down close to the cork. The heads are then embedded in a coating of sealing-wax, and the whole presents the appearance of two little combs. (See Fig. 1.) These combs are then employed in the following manner: The body of the cork prism being in contact with the mucous surface, the points of the pins are made to traverse the intestinal wall from within outward, at a distance of one or two millimetres from the lip of the wound. When they have all traversed the tissues, the two prisms are turned so that the points of the pins correspond, and then, on exerting upon them, through the intestinal wall, a slight pressure between the thumb and the index-finger, the pins of the right prism are made to penetrate the left prism, and *vice versa*. The intestinal wound is thus exactly united, so that no foreign body can appear at the peritoneal surface, and the intestine may then be left at rest in the abdomen.

Fig. 1.

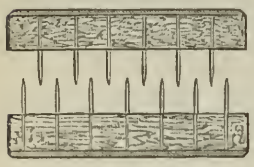


Fig. 2 represents a schematic section, which shows that the two prisms when united form a small oblong body without any outer roughness, and of a size to allow the free circulation of intestinal matter. A few days after the operation, when the circulation of the intestinal wound is complete, the portion of the tissue traversed by the pins detaches itself, the cork falls into the intestine, and is carried out with the fecal matter. The cork being dry at the moment when it is introduced into the intestine, it results that the humidity to which it is subjected afterward causes it to swell around the pins, and thus increases the solidity of union. But, if any fear is

Fig. 2.

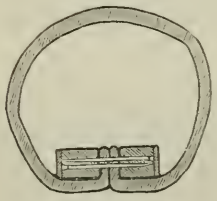
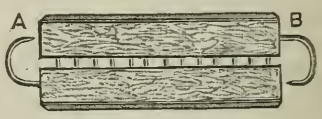


Fig. 3.



entertained lest the movements of the intestine should bring about the separation of the two pieces of cork, it is easy to introduce into each prism a curved pin of which the head has been previously cut off (Fig. 3); and when once the intestinal wound has been closed, by pressing slightly between the thumb and index-finger at A and B through the intestinal

wound, a union would be obtained which nothing could destroy in the bowel. But this last precaution is believed to be altogether superfluous.

If the intestinal wound is very extensive, two or more of the prisms which have been described may be placed end to end. The present proceeding is especially indicated for oblique and longitudinal wounds, but may also be applied to transverse wounds. In this case the prisms should be shorter, so that it would take six of them to occupy the entire circumference of the tube. They should first be placed in position separately upon each intestinal segment, and their union effected afterward.

Inman's Formula for Cases of Phthisis.—Thomas Inman, of Liverpool (*The Medical Mirror*), states that his favorite formula for cases of phthisis, or general debility, is this: "Keep the stomach for food, the rectum for physic, and the skin for oil." It is a homely saying, but not the less true on that account.—*New York Medical Record.*

Suppression of Pain after Operations.—At the last meeting of the Imperial Academy, M. Sedillot submitted a note on "The Suppression of Pain after Operations." He observed that a patient may undergo an operation in a state of absolute insensibility, but a state of suffering awaits his arousing from this condition, which it should be our object to avert. Opiates, refrigerants, chloral, etc., have been tried with this object without attaining it. The various kinds of cauterization render traumatic surfaces insensible and exempt from accidents. The actual cautery effects this, but the rapidity with which it cools, and the superficial character of its action, much restricts its employment. M. Nélaton tried the gas cautery, but the eschars this produces are too superficial, and the same may be said of those induced by a flame of oxygen and hydrogen experimented on by M. Sedillot. Of all measures of this kind the electric cautery, as perfected by the late Prof. Middledorpff, of Breslau, is the best and most certain. The degree of heat can be instantly varied as desired, rendered intermittent or continuous, and directed into the deepest cavities, or employed for the division of every description of tissues. To prevent loss of blood, it must be employed at a white heat, taking care to divide or destroy the tissues with extreme slowness. In this way M. Sedillot has performed numerous operations without loss of blood, and with great success. Burns, he observes, of the third degree cause but little pain; and he has seen persons mortally burnt preserving for several days their appetite and sleep and hopes of cure.

This absence of suffering in the severest burns is explained by the destruction of the nerves. And in the same way the electric cautery renders the wound it causes insensible, so that persons operated upon by its agency under chloroform experience no suffering on awakening. Later, at a period varying from the third to the ninth day, an inflammatory reaction is set up, but it is generally very slight, fever either being entirely wanting or soon ceasing.—*Medical Times and Gazette*, May 14, 1870.

Double Retinal Hyperæsthesia cured by Hydrotherapic Treatment.—Drs. Gaget and Toutan report (*Lyon Médicale*, December 5, 1869) a remarkable example of pure retinal hyperæsthesia, unattended by any other pathological complications.

Miss D., aged twenty, always enjoyed good health when a child; she menstruated at the early age of ten years and a half; when twelve years old she had an attack of pneumonia, followed by frequent angina, anæmia, palpitations of the heart, and all the manifestations of hysteria. Three years ago she felt some neuralgic pains upon the summit of the head, with sensations of very intense cold, and was obliged to cover her head with several thicknesses of flannel. Six months afterward, without having had any remission in the preceding phenomena, some symptoms appeared involving the eyes.

In the month of May, 1868, notwithstanding the use of very dark-blue spectacles, the patient could not go out in the sun without intolerable dazzling. This condition kept increasing until September, especially during the menstrual period. At that time the patient was obliged to confine herself to a dark room, the mere light of a candle producing extreme sensitiveness. This state lasted all the winter. In awaking, the patient perceived a very bright-yellow light. She occasionally attempted to look out-doors, but the sight of snow produced in her an excessively painful dazzling, followed by a muscular tremor of the lids and face, and a prickly sensation in the lips, and at the emergence of the nerves of the fifth pair, and upon the *trajet* of some of their branches; in a word, a sort of neuralgia of the face.

Toward the first few days of March began an improvement which continued until Easter. On that day, which was very cold, the patient, having attempted to go out of doors, had a relapse of all her troubles, but this time with a greater intensity. Confined in a completely dark apartment, having upon her eyes four silk bands lined with pasteboard, and the head buried in both hands, the patient had intolerable luminous phantasms. To the pricking sensations was added tinnitus aurium. In the middle of obscurity she perceived incessantly

a bright-red color; and on the least motion of the head, or the slightest pressure upon the eyes, she saw dazzling lights on a red sky full of stars, and furrowed, as it were, by lightning. At other times she saw stars, oval or round in shape, upon a black ground lined round with a very bright, clear, yellow light. These lights, four in number, were of the size of a ten-cent piece, disposed at the extremity of the horizontal and vertical diameters of the orbit, and appeared trembling. Often in the midst of the usual red light she used to see various hideous forms and phantasms.

After all means of rational treatment had been exhausted, she was taken to M. Gaget, of Lyons, for consultation. This physician diagnosticated a pure retinal hyperæsthesia, and advised the hydrotherapic treatment:

1. Ocular douche of half an hour, three times a day, *en pluie*, first with tepid and afterward with cold water.

The ocular douche was first given in quite a dark room, and by the light of a candle. After each douche, the patient kept cold compresses upon her eyes.

2. Morning and evening, general douche, lasting two minutes, and derivative douche *en jet* upon the vertebral column, the legs and feet.

3. Cold foot-bath of three to five minutes.

4. A few dry cups to the nape of the neck and between the shoulders.

After the first ocular douche, the patient could slightly open her eyes; on the third day she could open them entirely. The improvement was gradual, and at the end of one month and a half she was completely cured. The ophthalmoscopic examination, made by M. Gaget as soon as the patient could bear it, did not show any appreciable lesion of the retina. Vascularization was normal as well in the fundus of the eye as in the exterior.

The Female Anatomist.—A young woman may be seen daily, at half-past twelve, and for some hours thereafter, dissecting in one of the pavilions of the École Pratique. She seems to be about twenty-five years of age, and wears (when seated at the dissecting-table) a lady's round hat, and a blue garment having the general effect of a Frenchman's blouse. On Friday last, she was dissecting the thigh of a female subject, while at the same time a male fellow-student was dissecting the opposite limb. Several young men were engaged in dissecting other parts of the same subject.

The anatomical scene now described takes place daily in Dr. Fort's pavilion. A punning friend, when there with me the other day, said, pointing to the professor, "*C'est Fort;*"

and then added, pointing to the mixed dissecting group, "*Et c'est trop fort.*"

The female anatomist is said to be an *étrangère*—American, Prussian, or Scottish.—*Paris Correspondent British Med. Jour.*

The *Cincinnati Lancet and Observer* says of Dr. Landon C. Rives, who died June 3, 1870, in that city, at the age of eighty years: "He was one of the great professional men of his time. He came from Philadelphia, where he studied medicine, to this city in 1830, and practised up to 1857, when he retired from active life.

"He was one of the faculty in the Cincinnati College with Drs. Drake, Gross, Parker, Rogers, Harrison, and McDowell, the most able and reputable association of medical professors the West ever had, and he stood with them and maintained his position with uniform honor and ability.

"Of that faculty there are only two now living, Drs. Gross and Parker. Dr. Rives subsequently occupied a chair in the Medical College of Ohio, and was distinguished for a large sympathy with the young men in the profession of medicine.

"He was social, genial in disposition, devoted to his profession, and left no stain upon the record of his long and honorable career as a physician."

Sir James Young Simpson.—Much has been written regarding this distinguished man, and we had ourselves in preparation a sketch of his life and character collated from the numerous notices we have read and marked, but the following, from the *Edinburgh Medical Journal*, appears to us so just and so complete an estimate of the man that we present it to our readers in lieu of our own more desultory and less appreciative remarks: The son of a baker in a country town in Scotland, and the grandson of one who, we have often heard him say, worked as a quarryman in winter and a day-laborer in summer, Sir James raised himself by his own indomitable perseverance to the foremost place in the science which he adorned. Since the days of Boerhaave—who once received a letter from a Chinese mandarin, addressed "Boerhaave, Physician, Europe"—no physician has ever been more widely known; and even Boerhaave's name, learned and distinguished though he was, could never have been such a household word throughout the world as that of Simpson; for then we had no railways nor telegraphs, and, above all, we had no chloroform; neither the means nor the inducement in his days was equal to those in ours. But if no physician was ever more widely

known, it is still more true that no man, since the world was, was ever more greatly loved. Humble-minded, kind-hearted, and benevolent to a fault, it would have been strange had it been otherwise. He had his enemies, undoubtedly, as every one so restlessly active, so energetic, and so successful in enforcing his own views, must have; but even they could not help regarding him

> "With that stern joy which warriors feel
> In foemen worthy of their steel."

And his very antagonisms were productive of good to mankind by drawing forth the best energies of his opponents.

The greatness of our loss obscures our judgment and prevents us as yet from clearly discerning how great our Simpson was, and how irreparable to mankind is his premature removal; yet, some things we can discern through the mists of our grief. Augustus found Rome brick, and left it marble—Simpson adopted obstetrics when it was the lowest and most ignoble of our medical arts; he has left it a science numbering among its professors many of the most distinguished of our modern physicians. He found the surgical theatre a pandemonium resounding with groans and yells; he has left it a comparative elysium, where, amid happy dreams, the sufferer is painlessly relieved from his woes. He found medicine laboring under a curse of preventible disease, which no one was able or willing to remove; and his writings have done much to prove the possibility of stamping out such diseases, and to encourage the hope that mankind will yet relieve themselves of the incubus of woe and pauperism supinely permitted to exist. As members of a profession placed in the fore-front of the battle which science is ever waging with death and disease, and suffering more than all from those zymotic diseases which cut down the very flower of our youth, we owe Sir James a deep debt of gratitude for the energetic manner in which he has advocated the possibility of stamping out these diseases. And even as mere political economists our thanks are due to him; for it is to these diseases that a very large proportion of our pauperism is due.

But there is indeed no department of the medical art which has not received an impulse to progress from the restless genius of Simpson, and space would fail us were we to attempt to mention even a tithe of what he has done, or to recount the many novelties he introduced into obstetrics, medicine, and surgery, whether these were actually new remedies or merely novel applications of old remedial agents. Some of these, as his "air-tractor," and the inhalation of carbonic-acid gas, were ultimately found wanting and were dropped; others, as "acu-

pressure," are still *sub judice;* but cerium, chloroform, the stamping-out process of zymotic diseases, and a host of minor but scarcely less important improvements in therapeutics, still remain to attest his energy and success as a reformer in medicine.

In practical obstetrics his skill and enormous experience made him *facile princeps;* in surgery he was a mere ingenious theorist; while in pure physic his success lay in his *savoir faire* and his unrivalled fertility of resource, in his quickness to perceive the salient points of a case, and in his singular power of adapting his remedies to his patient, rather than in any great or accurate powers of diagnosis: thus, without being defective as a scientific physician, his greatest powers were displayed as a skilful practitioner.

At the meetings of medical and scientific societies, where controversy is life, the coolness of Simpson's temper, his unrivalled memory, and the extent and variety of his information, always enabled him to hold his own, and generally, in appearance at least, and often in fact, to come off the victor; and from his earliest to his latest days there could be no greater intellectual treat than to hear him pour forth, with sweet, persuasive eloquence, those masterly impromptu essays with which he was wont to delight the members of the Royal Medical, the Medico-Chirurgical, and the Royal Societies of Edinburgh.

As a writer, Simpson has produced no great work; his writings have been mainly a series of masterly but desultory essays, short but exhaustive, and all displaying in an eminent degree his power, singularly his own, of viewing things from all sides, and of supporting the view he wished to enforce by a vast amount of erudite and recondite lore. His extra-professional labors have been mainly antiquarian; and, while his writings on these subjects have been most ingenious and speculative, and have displayed a singular amount of curious learning and of diligent and untiring observation and inquiry, and have consequently excited a great amount of interest among the votaries of that science, they have been too purely speculative, and have belonged too much to that *terra incognita* where speculation alone avails, to be of much interest to the uninitiated in this fascinating pursuit.

As a man, however, we all meet him on common ground, and we do not exaggerate when we say that we never knew a more lovable man. His temper was almost imperturbable; in spite of his keen feelings he had it always in subjection; he never, in all his controversies, forced things to the bitter end —he was always ready to forgive and forget; and, when confined to what proved to be his death-bed, he exchanged pleas-

ant messages of mutual good-will and condolence with one of his oldest and most worthy antagonists,[1] who was also laid aside by serious illness. To his enemies he was forbearing, to his friends he was the very impersonation of kindness, ever ready to use his great influence for their advantage, ever willing to advise, and to employ his valuable time in their behalf, whether in furthering their temporal views, in relieving their sufferings, or in soothing their sorrows; and very many of his professional brethren have grateful occasion to recollect his unwearied, devoted, and unrewarded attention to themselves and their families in times of suffering and distress; while none of us can ever forget the pleasant smile and kindly grasp with which he was wont to greet us.

As a Christian, we believe him to have been an humble follower of his Lord. This phase of his character is, however, too sacred to be enlarged on here, and would not have been alluded to but for a mistaken part which his impulsive nature led him for a time to play. *Laborare est orare;* and Simpson was too true a man not soon to discover that the faithful discharge of duty, and the bearing of our cross for Jesus' sake, is a surer proof of our love to Him, and a more certain means of doing good to our fellow-men, than mere preaching and praying in public, however eloquently or impressively these services may be performed. With all his faults, no man ever possessed a larger share of the confidence of his fellow-men; and the grave has never closed over one who will be more widely or sincerely mourned.

Long a martyr to rheumatism, Sir James was about two months ago laid aside from active duty by a severe attack of *angina pectoris*, which recurred at uncertain intervals, and was accompanied by dyspnœa, and latterly by some degree of dropsy. Though great danger was apprehended from the first, the issue was long doubtful, and, up to a few days before his death, it was hoped that his valuable life might still be spared for some time, though a restoration to perfect health could not be expected. The end, however, was nearer than supposed; and, after a few days of unconsciousness, he quietly breathed his last at ten minutes to eight on the evening of Friday, the 6th of May. At the necropsy, the source of his sufferings and cause of his death was found to be a large, dilated, fatty heart, globular in shape, and weighing eighteen ounces. At the apex of the left ventricle, the wall of which was thinned, an aneurism, about the size of a pigeon's-egg, was discovered; all the other organs of the body were fatty. The

[1] Prof. Syme, of Edinburgh, who died a short time subsequently to Simpson. The estrangement between them had been of long standing.—[Editor New York Medical Journal.]

arteries of the brain were atheromatous in a high degree. The brain itself, that imperial source of all his restless mental activity, was found to be by no means large; it weighed only fifty-four ounces, and was consequently but little above the average of forty-nine and a half ounces. It may be remembered that the brain of Cuvier weighed sixty-four ounces, and that of Abercrombie sixty-three; so that Simpson's brain forms rather an exception to the rule, that mental power depends upon size of brain. On the other hand, it formed a remarkable example of the perhaps more incontrovertible fact, that mental vigor depends upon the number of the convolutions and the quantity of gray matter; for, on being exposed, the brain presented an appearance not soon to be forgotten by those who were privileged to see it, in the apparently increased number of the convolutions and their great size and development.

Though offered a tomb in Westminster Abbey—an honor but charily bestowed on the members of our profession—his friends, we think rightly, preferred to lay him to rest beside his children on the green slopes of Warriston Cemetery; and thither the remains of Simpson were conveyed in the afternoon of the 13th of May, amid all the pomp and ceremonial of a public funeral. The simple forms of Presbyterianism, and the stern reticence of Scotchmen, are not favorable to impressiveness on such an occasion, but no similar event has ever so deeply stirred the heart of Scotland; and the dense crowd collected from all parts of the city and neighboring country, and ranged along the route of procession, the number and influential character of the public bodies composing that procession, and the number of private carriages which followed in its wake, sufficiently attested the depth and extent of the feeling evoked. Never, since the days of Heinrich Frauenlob, could it be so truly said, as on that last sad occasion when James Young Simpson, who entered Edinburgh a friendless and unknown baker's son, and was conveyed to his last resting-place by the *élite* of his country, that instead of the busy hum and pattering feet of city life—

> "Nur Glockentöne schwirren gar bange durch die Luft
> Nur eine Strasse füllt sich und die führt in die Gruft;"

lines which the readers of German will pardon us for thus feebly translating—they describe the scene most effectively—

> "And only from the steeple sounds the death-bell's sullen boom;
> One street alone is crowded—it leads but to the tomb."

James Copland, M. D., F. R. S.—This well-known physician and author died in London, July 12th, of an attack of hæmaturia, connected with prostatic disease, followed by

retention of urine, and symptoms of uræmic poisoning, at the age of seventy-eight. He graduated in medicine, at the University of Edinburgh, in 1815; and soon afterward accepted an appointment on the Gold Coast, Africa, where he remained about a year; he next spent two years in France and Germany; and, returning to London in 1820, became a Licentiate of the Royal College of Surgeons, and settled down to practice, which he continued almost to the time of his death. He was for many years a teacher of medicine in the Middlesex Hospital; a Fellow of the Royal Society (1833), and of the Royal College of Physicians (1837), President of the Royal Medical and Chirurgical Society (1853). He delivered the Gulstonian Lectures in 1838, the Croonian Lectures in 1844–'46, the Lumleian Lectures in 1854–'55, and the Harveian Oration in 1857. In 1828 he became editor of the *London Medical Repository*, in conjunction with the late Prof. Robley Dunglison, and in 1825 projected an "Encyclopædic Dictionary of the Medical Sciences," in which he was to have been aided by Drs. Dunglison and Gordon Smith, the first part of which appeared in 1832; and on this wonderful work, the labor of thirty years, his fame as one of the most remarkable characters among medical men chiefly rests. A contemporary well remarks: "That one man should have undertaken, and laboring single-handed, or nearly so, completed such a work, is indeed a memorable fact. It is a monument of calm energy and self-reliance, such as is but rarely met with." This cyclopædic *résumé* of all subjects of practical medicine, with their history from the earliest times to the present day, with a full bibliography of each, and the author's own opinions, is a marvel of research and perseverance. Every line of it, he says in his preface, was written with his own hand, and all the proofs were read and corrected by himself. He survived its completion twelve years, and during that time made, assisted by his nephew, Mr. J. C. Copland, an excellent abridgment of it. He was, besides, a constant and copious writer.

Again we are called upon to announce the loss of another of the brightest ornaments of the profession, Prof. Albrecht von Graefe, who died in Berlin in the latter part of July. The *Lancet* says of him: The actual achievements of Von Graefe

for his beloved science were like those of the Emperor Augustus, who found Rome of brick and left it of marble. His first contribution to the *Archiv* was upon the physiology and pathology of the oblique muscles; and it will give some idea of the versatility of his powers to say that the same number also contained papers from his pen upon double vision after squint operations, upon diphtheritic conjunctivitis, upon cases under his treatment, and upon the effect of the most refrangible of the solar rays upon sensation. A few years later came his great discovery that the glaucomatous process could be arrested by iridectomy; and, after announcing this to the Ophthalmological Congress at Brussels, he published in the *Archiv*—vols. iii. and iv.—the two essays upon iridectomy that were translated for the Sydenham Society by Mr. Windsor. After a time his attention was much given to the investigation of the cerebral causes of blindness, on which he wrote several papers; and his last great work was to introduce and bring to perfection the "modified linear extraction" of cataract. In this operation many of the details on which Von Graefe dwelt were, perhaps, only of personal importance, since details of manipulation must vary with the dexterity of the surgeon; but the principle of the small external wound and the iridectomy has now been almost universally accepted, and must already have saved from destruction many hundreds of eyes that would otherwise have perished, as a matter of percentage, by some of the accidents incidental to the earlier method of operating. In the mean while, and interspersed among the greater monuments of his fame, the successive volumes of the *Archiv* contain his contributions to almost every branch of ocular pathology and therapeutics.

Besides the *Archiv*, Von Graefe was a frequent contributor to the Medical Society of Berlin, and to various medical journals. His method of cataract extraction was ferociously attacked in a pamphlet by Von Hasner, of Prague, whose future fame will probably rest upon this circumstance, and be kept from oblivion by the singular felicity with which Von Graefe demolished his statements and disproved his arguments.

In person the professor was of striking aspect—tall, slight, with long dark hair and beard, large lustrous dark eyes, and an expression singularly blended of mildness and dignity. He spoke English well, French and his native language with great animation and fluency; and his exhaustive knowledge of his ordinary subjects of discourse enabled him at once to enchain the attention and win the confidence of a listener. His personal ascendency over his patients, pupils, nurses, was that of a man whose innate gifts fitted him to rule. In the narrow sense of the word he was no specialist; and it was difficult to

say which was the most marvellous—his perfect mastery of every principle and detail of ophthalmology, or his command of illustrations from other departments of medicine, and his readiness to apply general principles to the cases that came under his care.

Von Graefe was married to a Danish lady, and leaves two children. He died of phthisis, under which he had been laboring for some years, and which appears to have followed an attack of acute pleuro-pneumonia, by which he was for several months disabled, and to which, as well as to the chief points of his career, allusion is made in the dedication to him of Donder's book on Astigmatism. At the time of his death his age could scarcely have exceeded forty-five years; and, for the last nineteen of those years, he has been to the human race one of the greatest of its benefactors. It is perhaps not too much to say that there can hardly be, either in Europe or America, a community of ten thousand people which does not contain at least one individual who is in the enjoyment of vision that has been preserved by iridectomy, and who, if Von Graefe had not lived, would now be unable to see the sun.

Appointments.—Prof. A. B. Crosby, M. D., has been appointed Professor of Surgery in the Long Island Medical College, *vice* Prof. Frank H. Hamilton, resigned. Prof. Crosby already holds the same chair in the Medical Department of the Universities of Vermont (Burlington, Vt.) and Michigan (Ann Arbor, Michigan). Prof. Hamilton has held this chair at Brooklyn since the organization of the college. Prof. Crosby, we learn, will hereafter make Brooklyn his permanent residence.

Prof. W. T. Lusk, of Long Island College, has been appointed to deliver the course of lectures on Physiology, in the Massachusetts Medical College (Medical Department Harvard University), during the ensuing winter. The compliment thus paid by this venerable institution to Prof. Lusk is as handsome as it is well merited.

F. S. Bartlett, M. D., of Chicago, has been appointed Professor of Inorganic and Analytical Chemistry, and H. P. Merriman, M. D., of the same city, Professor of Organic Chemistry and Toxicology, in the Chicago Medical College. These two chairs have been held by Prof. E. G. Wheeler, who has resigned. A new chair of Ophthalmology and Otology has

been created and filled by the appointment of S. J. Jones, M. D., of Chicago.

In the *Leavenworth Medical Herald* for August, Dr. L. L. Bedde publishes a case of "protracted gestation," in which the child was born three hundred and twenty-two days after the disappearance of the catamenial flow. The doctor seems to have entirely overlooked the recognized fact that a fruitful intercourse, just previous to the expected appearance of the catamenia, may arrest the hæmorrhage; and, deducting therefore thirty or even twenty-eight days (for we are not informed in this case what was the usual duration of the catamenial cycle), the term of gestation may be assumed to be only two hundred and ninety-two or two hundred and ninety-four days.

Death by the Guillotine has usually and rightly been regarded as one of the most speedy and painless modes of exit from this world. Quite recently, however, about the time of Troppmann's execution for a series of horrible sensational murders, which had excited the nervous system of the world to an almost unbearable degree, a medical man named Pinel took upon him to cap these horrors by making the startling announcement that death by the guillotine was one of the most horrible of deaths, because, by reason of the suddenness of the process, life was retained in the head for at least three hours after death. This statement, garnished by equally logical and rational physiological explanations, and accompanied by a host of sensational stories, went the round of the newspapers, and startled the public mind not a little. In a recent communication to the Société de Médecine Légale, M. le Docteur Evrard (de Beauvais) and M. le Docteur Beaumetz have related a series of experiments which they had made upon a head which was delivered to them five minutes after decapitation. The head was placed upon a table, covered by compresses to absorb the blood which might flow from it. The face was of one dull, uniform, waxy hue, the lower jaw fallen, and the mouth open. The expression was that of stupor, not of suffering. The eyes were open, fixed, looking straight before them; the pupils dilated; the cornea had already commenced to lose its lustre and transparency. A few particles of sawdust stuck here and there upon the face, but none were to be found inside the lips or on the tongue. The external meatus was carefully cleansed, and the experimenters, bringing their lips as close as possible to

the ear, thrice called out the criminal's name with a loud voice. No movement of the features or eyes resulted. A piece of charpie saturated with caustic ammonia was next placed under the nostrils; neither the alæ nasi nor any of the facial muscles moved. The conjunctiva of each eye was deeply and successively cauterized with nitrate of silver; the flame of a candle was brought within the distance of two centimètres from the cornea, yet no contraction was observed in the eyelids, eyeball, or pupils. The organs of sense absolutely refused to give any response, either by their functional or more purely physical sensibility. Various incisions were then made through sundry nerves and muscles. The muscles alone gave signs of life; they contracted energetically under the knife, but no grimace, no reflex action, no sign of nerve-life, was observed. And the muscular contractions were produced by galvanism even so long as half an hour after the brain was extracted, and when the skin was already cold, but no one could suppose that psychical life then existed; and we think our authors perfectly justified in the conclusions they have arrived at, which are, moreover, identical with those attained after a similar series of experiments by the Medical Association of Mayence in 1803, —viz., that "the sensation of external impression does not persist for one instant after decapitation;" and there can be no doubt of its truth. Without following our authors into their researches into the state of the thoracic organs, which present nothing bearing upon this point at all, and nothing, at any rate, either novel or important, we would only wish to record further that they found no fluid in the arachnoid cavity; that the vessels of the pia mater were almost bloodless, and filled with aëriform fluid; the lateral cavernous sinuses were absolutely bloodless; the ventricles contained scarcely a teaspoonful of fluid; and in no part was the brain injected.

The falling of the lower jaw, and its subsequent closure by cadaveric rigidity, is, in our authors' opinion, quite sufficient to explain the horrible stories of heads biting one another, as related by Sanson and other executioners, so far as these stories are not mere lies. Heindreich, the present executioner, has never observed any other sign of life then two or three slight movements of the lower jaw, similar to those so often seen at the last in those dying from other causes.

Those who are acquainted with "Les mille et un Fantômes" of M. Dumas will be at no loss to account for the sensational stories of M. Pinel, and will readily trace the source of his physiological reasoning. But Dumas goes a little beyond Pinel, because he makes a head, two hours after decapitation, not only call out the name of its lover, but actually recognize him by dim candle-light through a "sac," while the eyes dropped

tears of sorrow! Our authors, in an historical introduction, establish the rights of Dr. Guillotin to the resurrection of the fatal instrument named after him, but claim our Scottish Maiden as its earliest prototype; this, they say, was in use in a "Scottish clan" in the sixteenth century. — *Gazette Hebdomadaire*, February 18th, and *Edinburgh Medical Journal.*

Feeding by the Nose in Fever.—Dr. G. P. Tennent, of the Glasgow City Fever Hospital, in a paper communicated to the *Glasgow Medical Journal* of November, 1869, after noting the various expedients usually resorted to for the purpose of sustaining the strength of fever patients by the forcible introduction of food into the economy, says:

The method which I prefer to all these and recommend is that of nasal feeding, by passing a gum-elastic catheter through the nares into the œsophagus, and then using an ordinary glass syringe. The nasal passages present an entrance over which the patient has no control whatever, either during or after introduction; and generally, when the slight amount of preparatory struggling has been overcome, he resigns himself contentedly to such measures, the hopelessness of resistance being evident. It has now been employed at the Fever Hospital for some time with the most pleasing results, and is found to be at once easy of execution, entirely devoid of danger, and thoroughly effectual. A catheter and syringe are always at hand, and they can be used with so little trouble that when the symptoms arise no time is lost; and so the rapid and irretrievable sinking which ensues when no food is being taken is avoided.

In the *Lancet* of March 20 and 27, 1869, Dr. Moxey contributes some interesting remarks on nasal feeding, in which he affirms that this method is still insufficiently recognized, and highly commends its comparative excellence in insanity and some other diseases. He, however, uses a Wedgewood funnel, introducing the end of it into one of the nostrils, and then pouring into the funnel, from a cream-jug or other vessel, the fluid nutriment.

In fever, at any rate, I consider that the employment of a catheter is to be preferred. With the latter there is no need for watching the respirations, as there must be with the former; but what is of still greater importance is that in cases of typhus the reflex sensibility is much diminished, and the epiglottis is often held vertical by agglutinated secretions, or, at all events, closes imperfectly, so that there would with the funnel be very considerable risk of some portions of the fluid passing into the larynx. This with the catheter is impossible. The only con-

ditions to be attended to in its use are: 1. To oil it. 2. To see that it is not too flexible, as, if so, it is apt to bend in all directions, and thus be more difficult to pass. 3. To remember that it may be passed into the larynx; its presence there generally produces irritation and coughing; and, moreover, air passes through the catheter. 4. After the catheter is introduced, to watch that it does not slip back through the nares. This may seem an unnecessary caution, but where the nasal passages are large, the patient breathing heavily through the nose, and involuntary deglutition occasionally occurring, it might happen. In the event of its slipping too far back to be laid hold of in the nares, it will be no easy matter to extract it by the mouth. A string attached to the catheter will guard against this possibility. 5. If the catheter is not readily passed by the one nostril, try the other.

Dr. Alfred Swain Taylor, so well known in this country by his work on Medical Jurisprudence, has resigned his professorship (Medical Jurisprudence and Chemistry) at Guy's Hospital, London.

M. Trouve's New Polyscope.—This instrument, which serves for a laryngoscope, ophthalmoscope, otoscope, and urethroscope, represents when closed a case seven inches long by one inch and a quarter in diameter. The two parts composing it carry each a lens at their opposite extremities—the one two and a half inches, and the other three and a half. In the lids which close the case, two mirrors are placed, the one plane the other concave, both being pierced in the centre. The case contains—1. Two larynx mirrors with handle. 2. Three ear-speculums. 3. A photophor or candlestick with three branches, terminating on the side of the light by a vent, which at the same time does for a reflector; the photophor can ascend to the height of fifteen and three-quarter inches.

Effect of Electricity on the Uterine Contractions.—Dr. de Saint Germain has proved conclusively, from his recent experiences, that electricity does not provoke uterine contractions when they have not yet spontaneously appeared, but that it quickens them when the pains have begun, the placenta, as a general rule, being immediately expelled after the birth of the child. This rapid expulsion of the after-birth appears to constitute one of the most important applications of the electric current. Dr. Radford had already used this means to arrest hæmorrhages connected with delivery, likewise Dr. Barnès to counteract the effects of uterine inertia.

Rarissimum Peritonæi Receptaculum.—Under this name Neubaüer describes an excessively rare disposition of the peritonæum, which has since been observed only once by M. Cruveilhier. An analogous case has recently been observed at the Hospital Beaujon, by MM. Montard Martin and Mathis, and is described by them in the *Union Médicale*, No. 93, 1869.

In making the autopsy of a man dead of typhoid fever, they saw, after opening the abdomen, a bladder of ovoid form, and of the size of the head of a six-months child, entirely free from adhesions. This bladder, surrounded by the large intestine, presented a very thin, smooth, and perfectly transparent coat, presenting to the eye all the characters of the peritoneal membrane; it was open, and was found to contain all the small intestines, from the pylorus to the point where it emerges into the large intestine. The intestine, with the mesentery, was lying free and without adhesions. At the same time, in attempting to carry the finger into Winslow's hiatus, to penetrate in the posterior cavity of the omentums, it was ascertained that this hiatus was absent.

Preparation of Chloral.—We find in the *Gazette Médicale de Paris*, March 12, 1870, a communication made by M. Adrian, to the *Société de Thérapeutique*, regarding the difficulties he had encountered in the preparation of chloral, in following all the indications given by Dumas in his "*Traité de Chimie.*" He thinks that, before studying the therapeutical properties of this new medicament, we should know some uniform process which will always give the same product. He presented to the Society several samples of chloral, some of which are in small friable crystals, fatty to the touch, of a sweet smell, reminding one of acetic ether, exhaling no vapor, and having no action upon litmus-paper. Other specimens on the contrary are in crystalline masses or cakes hard to break by the fingers; of acid reaction and sharp, pungent odor, and producing abundant vapors in the air.

To explain the difference existing between these products, M. Adrian gives the details of the manufacture of chloral, which he divides into three phases: 1. Action of chlorine upon alcohol. 2. Rectification and purification of the anhydrous chloral. 3. Preparation and purification of the hydrate of chloral.

Chloral is obtained by causing a rapid current of chlorine to pass through anhydrous alcohol until the excess of gas is no longer charged with chlorhydric acid vapors. The oily and complex liquid resulting from the reaction of chlorine upon alcohol is distilled with lime. The anhydrous chloral thus purified is hydrated by adding to it 12 per cent. of water, and

then crystallized hydrate of chloral is obtained by cooling. Such is the preparation of chloral reduced to its simplest expression; but the practical execution of it presents great difficulties. Indeed, all chemists know that it is not always easy to obtain completely anhydrous alcohol, and, under the name of absolute alcohol, we most frequently have a liquid marking ninety-eight to one hundred centesimal degrees with Gay-Lussac's alcolometre. Now, if dry chlorine is made to react upon alcohol still containing about 1 per cent. of water, the product remains constantly liquid; while in operating upon perfectly anhydrous alcohol the mixture takes on the form of a solid mass on cooling, and the action of chlorine seems to be stopped in leaving a portion of the alcohol which it is very difficult to transform completely. In this last case, a crystalline compound which seems to be a mixture of hydrate and alcoholate of chloral soiled by a chlorinated liquid of an oily consistence is produced. By expressing this mixture to separate the oily portions of it and by distilling the solid body, a crystallized compound having all the appearance of the hydrate of chloral is obtained. But let us suppose for a moment, as most commonly occurs, that the action of dry chlorine should take place upon alcohol at only 98° or 100°. Then results a complex liquid beginning to boil at 60° Cent., and is distilled at 98° Cent. In the rectification by sulphuric acid, a very abundant escape of chlorhydric gas is observed in the beginning of the distillation. This gas ceases very soon, but reappears toward the end of the operation.

Finally, the author concludes by saying that to obtain pure chloral it must be made in small quantities; when operating upon three or four pounds of alcohol at once, the purification becomes much more difficult, and the hydrate of chloral does not possess all the qualities above mentioned.

Production of Bone from Medulla.—An interesting "provisional communication" appears in No. 24 of the *Centralblatt*, from the pen of M. Baikow, on the effects of transplantation of medulla. M. Baikow made two series of experiments. In one set, which were thirty-eight in number, the medulla from the femur or tibia of a dog was placed under the skin of the back of another dog; while, in a second set, twenty-eight in number, the marrow was inserted beneath the skin of the back of the same individual. The first set of experiments all failed; bone was formed in none. In the second set fourteen cases succeeded—i. e., bone was actually formed; while in the remaining six cases the changes that occurred in the early stages were followed. The remaining eight cases were unsuccessful. In the fourteen successful cases bony masses were found in

various stages of development, from the earliest rudiments to complete formation, with Haversian canals, lamellæ, stellate lacunæ, and medullary cavities filled with medulla. Up to the present time, M. Baikow's experiments extend only to the seventy-sixth day. In one case, at the sixty-first day, not only was complete bone present, but fibro-cartilage. The results of examinations showed that the medulla, after transplantation, first passed into the condition of fibrous tissue, from which, by the proliferation of the cellular elements, bone or cartilage was developed. M. Baikow's results are in opposition to those of M. Ollier, but corroborate those of M. Goujon.

In the *Abeille Médicale*, Paris, June 20, 1870, we find the report of a case of stricture of the urethra, treated by internal incision, by M. Tillaux. We give the following abstract of the case, with remarks and quotations:

A., aged thirty-five, entered the Hospital St. Antoine, September 8, 1869, with a stricture, in the bulbous portion of the urethra, so narrow that the urine constantly dribbled, and no instrument could traverse it. On the 18th, however, a bougie of one-third of a millimetre was introduced, and a chill ensued. Every new attempt at catheterism was followed by urethral fever, until November 4th. On December 5th, M. Tillaux decided to perform internal division with Maisonneuve's urethrotome, but had to employ a modified instrument made by Messrs. Robert et Colin. A whalebone guide was substituted for the soft gum conducting bougie, and the grooved steel conductor was tunnelled so as to slide upon the whalebone bougie, then the blade was introduced, and the operation done with success, and much to the satisfaction of M. Tillaux, who remarked that M. Maisonneuve, in constructing his instrument, had rendered a great service to surgery; thanks to him, the operation has become easier and more efficacious. It can be employed in the great majority of cases, and, when it is not applicable, no other instruments are. However, under certain circumstances, its use is very difficult, if not impossible, as shown by the case in point.

It is not stated whether M. Tillaux, or the surgical cutler, claims the device, or whose it is.

We beg leave to inform our transatlantic brethren that the invention is American, and belongs to our countryman

Prof. Gouley, of the University of New York. This method of internal urethrotomy was first proposed and practised by Prof. Gouley in 1866, and the following extract, with an illustrative case, from the *Medical Record* of April 15, 1870, p. 76, will establish his claim to priority:

The difficulties which I had experienced, in the two cases just related, suggested to me a device by which they might in future be obviated. The first and really difficult step of Maisonneuve's operation is to pass the gum conductor. I have seen the attempt made by clever surgeons, without success; and have often witnessed bending of the bougie in front of the obstruction, so that its point would appear at the external orifice. My success with capillary whalebone bougies induced me to employ them as conductors in urethrotomy, and I had but to adapt Maisonneuve's blade to the vesical end of my smallest-tunnelled sound, and I had a urethrotome of the simplest construction for cutting from before backward. The blade being sharp, both in front and behind the blunted summit, it could also be used to cut from behind forward.

Case.—John G., aged fifty-three, entered Bellevue Hospital, March 7, 1866. Gonorrhœa ten years previously. Narrow stricture in the region of the bulb. Dysuria. Frequent micturition. Retention relieved spontaneously. Dilatation persistently tried without success. On May 5, 1866, after exploration, I injected half an ounce of oil into the urethra, passed a capillary whalebone bougie, introduced the tunnelled urethrotome, and divided the stricture freely. No anæsthetic. No catheter retained. Sound No. 18. Hæmorrhage very moderate. Hip-bath, rest, diluents, quinine, and iron. Slight febrile reaction on the following day, none afterward. Catheterism every second day. Patient discharged on the 20th of May, and advised to continue the use of his sound.

In the same journal (p. 75), while speaking of Charrière's urethrotome, he says: "I would suggest the *tunnelling* of the point of this instrument, and that the whalebone guide be substituted for Maisonneuve's gum conductor."

The following is extracted from an article of Dr. Gouley's, which appeared in the *Medical Record*, May 15, 1869, also in the *Lancet*, June, 1869. The same article was reprinted in the New York Medical Journal, August, 1869, and largely circulated in pamphlet form, both in London and Paris:

The guide may be kept in position after the withdrawal of the catheter, and dilatation carried on by the successive intro-

duction of larger-sized catheters of similar construction; or divulsion may be resorted to by means of Mr. Holt's or Sir Henry Thompson's instrument, modified by means of the terminal canal for the passage of the guide; or *internal urethrotomy* may be practised *with any* of the various urethrotomes, having only this simple modification.

With a final quotation from the *Medical Record*, March 15, 1870, we trust we shall have shown to whom belongs the credit of having introduced a valuable improvement in urethral catheterism. At p. 32, Prof. Gouley says:

This preliminary dilatation is, I believe, best accomplished by the aid of the grooved steel staff—devised by me seven years ago—two millimetres in diameter at its point, which is tunnelled for one-eighth of an inch. If the free end of the guide-bougie, which already occupies the whole length of the urethra, be passed through this tunnel or canal, the staff, as it advances, must follow the guide-bougie.[1]

Temperature of the Cranial Cavity.—The temperature of the cranial cavity has lately been made the subject of investigation by M. Mendel, of Pankow, near Berlin. Fick had already found the normal temperature of the cranial cavity to be lower than that of the body generally. Jacobson and Bernhardt had likewise noticed the inferior temperature of the blood arriving at the heart by the superior vena cava, as well as the depression it produces in the right cavities. M. Mendel corroborates these results, and finds constantly that in health there is a difference amounting to seven-tenths, or even to one degree Centigrade, between the temperature of the cranial cavity and the rectum in the rabbit; and that in the dog the difference is almost as well marked. Duméril and Demarquay have shown that the temperature of the body is lowered by the action of chloroform. Bouisson arrived at the same

[1] This method of catheterism is, I believe, an improvement on the old French mode of catheterism upon a conductor, devised by Desault, or on the method of Wakley, or the more modern device of Maisonneuve, which he names "cathétérisme à la suite," with a small gum bougie, which very often coils up in front of the stricture instead of entering it. This very flexible guide has been adapted by Maisonneuve to his urethrotome, and is very liable to be cut across by the blade of the instrument. Voillemier has also adapted it to his divulsor. Here again it has similar disadvantages, and will meet with very little favor. But the whalebone guide-bougie adapts itself admirably to the inflections of the urethra, and is applicable to the catheterism of strictures situated either in the pendulous portion or subpubic curve of the canal. I have sometimes used the fine English bougies as guides to the steel staff. They are stiffer, and therefore better than the French.

results, as have also Sulzynski and Scheinnesson, the experiments of the latter having been performed upon man. The differences observed by Mendel between the temperatures of the cranium and the rectum are much more clearly marked when the animal is under the influence of chloroform than when in a normal state. Chloroform lowers the temperature generally, but especially that of the cranial cavity. The effects produced by chloral on the temperature of the body generally have been already studied by Demarquay. This author has found that the temperature of the body falls several tenths of a degree. M. Mendel arrives at the same results in regard to the temperature of the cranial cavity, except that he has observed it to fall to a still greater degree than the general temperature. Deguix, Dupuy, Leuret, and Gscheidlen have found that, after a moderate or therapeutical dose of morphia, the temperature of the body rises; though when administered in a poisonous dose it falls. Mendel again arrives at the same law, viz., that the depression of temperature is more marked, and occurs more rapidly, in the cranial cavity than in the rest of the body. In poisoning by alcohol, the temperature of the cranial cavity rises to such a point that it exceeds the temperature of the rectum.—*Lancet*, July 9, 1870.

Dr. Edwin Lee, the well-known author of the "Hand-books upon the Baths and Watering-places of the Continent," died, at the age of forty-one years, on the 4th of June, from cancerous stricture of the rectum, from which he had been suffering for several years. He was also the author of the Jacksonian prize essay, "On the Comparative Advantages of Lithotomy and Lithotrity," but was perhaps best known by the hand-books above referred to.

The *British Medical Journal* expresses the hope that "it will not be long before every intelligent mother of a family is familiar with the use of the thermometer for the discovery of disease. In many respects, it is far more reliable than the tongue or the pulse. As a means of ascertaining when it is desirable to consult a doctor, and when advice may be deferred with safety, it would be invaluable. By its aid the difference between insignificant skin-rashes, which will disappear in a day or two, and those which imply a constitutional fever, may usually be satisfactorily determined. Under many circumstances, the early discovery that a child was sickening for scarlatina or measles might be of great importance. We hope that before long a few brief rules adapted for home employment will be prepared, and that, aided by them, the mothers

and nurses of our land will at once commence the acquisition of a kind of experience which will become every year of increased importance. In addition to its practical value in reference to the health of their households, we must also add that all who become familiar with the facts of human thermometry must learn some very interesting lessons in physiology."

The Treatment of Sciatica.—Mr. J. Waring-Curran, in the *Medical Press and Circular*, says:

In my student-days the over-estimated iron of Sir Dominic Corrigan was in constant requisition by the Dublin Hospital surgeons. In practice, I have obtained nothing but vexatious disappointment in its use, as a counter-irritant in the treatment of sciatica. The numerous cases recorded by the Dublin men, wherein Corrigan's iron was employed with so much benefit, were cases wherein change of diet, rest, and warmth, and a suitable internal treatment, contributed as much to benefit the patient as the counter-irritants. Blistering along the course of the nerve is very uncertain. The hypodermic injection of morphine lulls the pain for a time, which only begins with unusual severity, and the strong liniments of aconite and belladonna, when applied to the surface, I have ever found inert. Accordingly, I have adopted the following treatment: I have employed it now for some years, and can confidently recommend it as being safer, surer, and more satisfactory, than any treatment, or method of treatment, I have anywhere observed, or that I have myself ever employed.

In a small porcelain vessel I mix one grain of morphine and three grains of extract of belladonna with six drops of creosote. I get my patient out of bed, standing as erect as the nature of his disease will permit him, and began making small incisions, half an inch long, with an intervening space of three inches between each incision, cutting only through the skin and subcutaneous cellular tissues. I make the incisions alternate on each side of the nerve, beginning underneath the fold of the *gluteus maximus*. Having wiped off the effused blood, I quickly rub in the composition. The morphine and belladonna allay the pain, and the creosote sets up, if properly applied, a certain amount of local irritation, which is very desirable. M. du Chaillu, in his exhaustive and popular work on the gorilla, records a somewhat similar procedure existing among the Celond races. If my memory serves me, caustic lime is the agent he records as being employed.

To every patient suffering from sciatica I exhibit iodide of ammonium, and I have remarked, as I hope soon to show, that its therapeutic power is superior to the iodide of potassium, but in no complaint will this be appreciated more than

in the *eruption* stages of syphilis and in diseases of the glandular system. The patient, bent double with acute pain, will be found, after the incisions are made and the morphine composition rubbed in, able to move his leg freely in any direction. There is, of course, a numb feeling experienced, but the liberation from acute suffering provokes an expression of gratitude, which is conclusive evidence of the value of the plan of treatment advocated.

The Therapeutics of Chronic Constipation.—Dr. J. K. Spender, of Bath, England, in a paper upon this subject contributed to the *Medical Times and Gazette*, says:

The plan which I propose comprises four therapeutic factors: (*a*) minute and frequent doses of watery extract of aloes, very rarely of extract of colocynth; (*b*) a dose of sulphate of iron (gr. jss or ij) always combined with each dose of the direct aperient; (*c*) regulation of the diet; (*d*) constitutional exercise. I have to write chiefly of factors (*a*) and (*b*). The quantity of extract of aloes, in all but extraordinary cases, should not exceed one grain. It is conveniently given in the form of a pill. With this pill there should always be mixed a dose of sulphate of iron varying from one to three grains; this is the essential point of the treatment. Any other tonic of the neurotic kind cannot supply the place of the iron; for the purpose I am now relating, iron is not only *facile princeps*, but is not interchangeable by any thing else. Extract of nux vomica may be added, if the prescriber pleases, as an ornamental appendage or as a means of blending the other constituents together; and belladonna is a remedy of definite auxiliary power, but both these drugs, *quoad* constipation of the bowels, are uncertain or unsatisfactory, and rarely do permanent good. I begin, then, by desiring an adult patient to take a pill composed as above three times a day, immediately after the principal meals. He is cautioned that at first there will be probably no apparent effect, and that two or even three days may pass before any medicinal evacuation of the bowels takes place, perhaps even then difficult and discomforting. But within the next forty-eight hours there will be most likely an evacuation of the bowels once, or possibly twice in the day; *but nothing approaching to purgation ought ever to be permitted*, and therefore the patient must be instructed, on the occurrence of the first loose motion, to withhold a pill, and to take only one in the morning and one in the evening. He then continues for a time his morning and evening pill, and is pleased to discover that so slender a medicament has such a decided effect. Not improbably, at the end of another week

or fortnight, he is compelled, by the same reason as before, to drop another pill, and the same result is now brought about by one pill daily, as was originally produced by three pills. Within another month, he may reduce his allowance of medicine to a single pill once or twice a week; and, finally, his whole scheme of medical treatment becomes merely preventive in its design and scope, and he takes a pill occasionally for the sake of maintaining health and warding off old troubles.

Amputation during Anæsthesia with Chloral.—Dr. Noir (of Brioude, France) has published, in the *Gazette des Hôpitaux* of December 23, 1869, the case of a man, aged sixty-four, suffering acutely from osteosarcoma of the leg. The patient was very anxious to have the limb taken off; and, as a trial, he took about sixty grains of chloral, dissolved in two ounces of simple syrup, at 8 A. M. Up to nine o'clock, he frequently made efforts at vomiting, and had defective vision; after this came violent excitement, which lasted two hours; he then fell asleep, and soon was so insensible that he could be moved about without waking. This sleep lasted about an hour and a half, and the patient, on coming to his senses, said that he felt very well, and asked for food. Pain had of late deprived him of sleep, and he was overjoyed to have had some rest.

Two days after this, the man took seventy-five grains of chloral at eight in the morning, and was uncomfortable for two hours, when he fell into a deep slumber, and underwent amputation of the leg without moving or uttering a sound. After being placed in bed, the patient sank into an alarming coma for one hour; after which, on waking, he was seized with violent delirium and severe vomiting. These fearful symptoms lasted about seven hours, when the poor man passed into a state of complete prostration, and recovered his senses; but did not recollect any thing of what had passed, and could hardly speak or move. He took some beef-tea, had a sleepless but quiet night, and the next day all the effects of the chloral had passed off.

Dr. Noir remarks that, in this case, delirium, prostration, and coma, were so alarming that it would be imprudent to use chloral as an anæsthetic in operations if further experience prove that these dangerous symptoms regularly present themselves. There can, however, be no doubt, he adds, that insensibility was complete during the operation.—*Lancet*, January 1, 1870.

Subcutaneous Division of the Thigh-bone.—Subcutaneous surgical practice has made a remarkable advance during the

present month. In the latter part of November a man was admitted into the Great Northern Hospital, under the care of Mr. Wm. Adams, with anchylosis of the hip-joint, the result of a rheumatic fever suffered seven years ago. The limb of the patient being so deformed as to be utterly useless, Mr. Adams determined to make a subcutaneous division of the neck of the thigh-bone, within the capsular ligament. He performed the operation on the 1st of December, piercing to the bone with a long small knife, and dividing the bone itself with a fine saw. The leg was brought, immediately after the division of the neck of the bone, into a straight position, and fixed into a long splint, and the case has progressed with not one bad symptom, and the wound has closed without any inflammatory action or suppuration. The splint has been removed, and the man can move the thigh to a limited extent. Whether motion of the limb can be preserved remains to be proved, and, if it cannot, the limb will be transferred from a useless to a useful condition; but the great value of the case is that it establishes as a fact the possibility of performing so important an operation subcutaneously, and without an untoward symptom as a result. The operation will be a mark, in the year now nearly over, of the triumph of subcutaneous surgery.—*Lancet*, December 8, 1869.

Small-pox in Paris.—As supplementary to the note published in our last number, we quote the following paragraph from the *Lancet*, of July 23d: "The fatality of the small-pox epidemic in Paris continues to be alarmingly excessive. The reported deaths last week were, it is true, only 225, as against 267 in the week preceding; but the weekly fluctuations are less significant than the maintenance during the last seven weeks of so high an average as 216 deaths per week from this malady alone. Since the beginning of the present year—that is, in twenty-eight weeks—the total number of deaths returned in the *Bulletins Hebdomadaires* from small-pox has been 3,674, yielding an annual rate of mortality equivalent to 36 deaths to every 10,000 of the Parisian population. In other words, supposing the epidemic to decline from the present moment to the end of the year at the same rate as it has risen from the commencement of the year to this time, no less than 6,800 persons will have fallen victims to the disease in the twelve months. It may be interesting as well as useful to state that the greatest number of deaths from small-pox registered in London in any year since the passing of the Vaccination Act in 1840 has been 1,996; and that in the pre-vaccinal year 1838, when small-pox visited England with terrible severity, the fatal cases in the metropolis amounted to 3,817, or to only a

few more than have died in Paris during the last six months. The present population of Paris is 1,889,842, and of London 3,214,707. Small-pox caused 711 deaths in the French capital in 1869, 638 in 1868, 324 in 1867, 581 in 1866, and 765 in 1865.

Carbonic Acid.—In a late lecture Dr. Benjamin W. Richardson took for his subject some new and curious points, relating to the physiological action of carbonic acid. After briefly describing the chief physiological facts ascertained since the discovery of carbonic acid as a product of the respiratory process by the illustrious Black, the lecturer proceeded to illustrate the effect of carbonic acid on animal and vegetable fluids. He said that his friend, the eminent chemist, Dr. F. Versmann, in studying the manufacture of some medicinal waters, had found, much to his annoyance, that when carbonic acid, with a little soda, was brought into contact under pressure with some vegetable infusions, the gas was fixed to a large extent, and the infusion was quickly transformed into a thick, glairy fluid. Some infusion of orange and gentian treated in this manner was shown: the liquid was beautifully transparent, but glairy and thick, and, when transferred from one vessel to another, it turned out in a mass like albumen. This observation suggested to Dr. Richardson the importance of experimental inquiry as to the influence of carbonic acid on animal fluids, on the mucous secretion of the air-passages, on albumen, on serum, on solution of muscle, on fibrine, on blood, on blood-corpuscles, on bile, milk, and other animal secretions. He now showed some of his results, especially those relating to the precipitation of colloids. Albumen was shown as precipitated from serum, fibrine from a solution of muscular fibrine, and fibrine from a solution in blood. Next it was demonstrated that the blood-corpuscles by exerting a condensing effect on the acid prevented it by their presence from precipitating the colloids; and lastly, it was demonstrated that freshly-drawn defibrinated blood, subjected to carbonic acid under pressure, while it was rendered very dark by the process, on being exposed to the air at 60° Fahr. gave up the acid and seized oxygen in place of it with such avidity that a surface of blood a foot square was changed almost instantaneously from deep-black into bright-red arterial blood. Thus, the lecturer reasoned, carbonic acid on the blood side of the pulmonary vesicular surface is as important a necessity for respiration as is oxygen on the air side.—*Medical Times and Gazette*, May 21, 1870.

Erratum.—In August number, p. 87, beginning of second paragraph, for "Dr. Nott" read "Dr. Newman."

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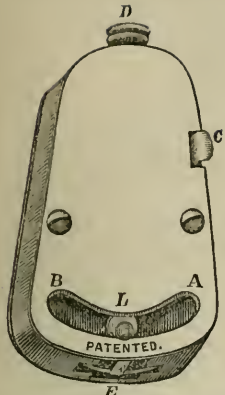

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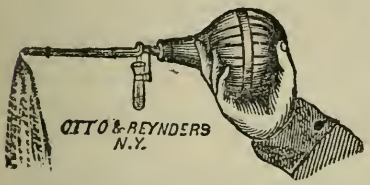

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Prof. of Physiology and Microscopy, and Secretary of the Faculty.

Special Lectures in the Regular Term.—OPHTHALMOLOGY, by Prof. Henry D. Noyes, M. D. DISEASES OF THE SKIN, by Prof. Foster Swift, M. D.

A distinctive feature of the method of instruction in this College is the union of clinical and didactic teaching. All the lectures are given within the Hospital grounds. During the Regular Winter Session, in addition to four didactic lectures on every week-day, except Saturday, two or three hours are daily allotted to clinical instruction. The union of clinical and didactic teaching will also be carried out in the Summer Session, nearly all of the teachers in this Faculty being physicians and surgeons in the Bellevue Hospital and the great Charity Hospital on Blackwell's Island.

This Session will consist of two Recitation Terms; the first from March 14th to July 1st, and the second from September 1st to the opening of the Regular Session. During this Session there will be daily recitations in all the departments held by members of the regular Faculty and their assistants. Regular clinics will also be held daily.

FEES FOR THE REGULAR SESSION.

Fees for Tickets to all the Lectures during the Preliminary and Regular Term, including Clinical Lectures	$140 00
Matriculation Fee	5 00
Demonstrator's Ticket (including material for dissection)	10 00
Graduation Fee	30 00

FEES FOR THE SUMMER SESSION.

Matriculation (Ticket good for the following Winter)	$ 5 00
Recitations and Clinics	35 00
Chemical Laboratory (including material)	25 00
Dissecting (Ticket good for the following Winter)	10 00

For the Annual Circular and Catalogue, giving regulations for graduation and other information, address the Secretary of the College, Prof. AUSTIN FLINT, JR., Bellevue Hospital Medical College.